MAGAZINE OF BUILDING

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architectural **forum**

April 1953

Hotel that research built Statler in Hartford shows how to build a better hotel cheaper (p. 138)

Air conditioning The biggest new idea in apartments (p. 156)

Good-by neighborhood schools? New Orleans would save money by carrying city children to school villages in the country (p. 129)

Recreation center It looks like a country club but boosts factory production (p. 122)

Building engineering Precast concrete frames.... Hotel air conditioning.... Iced concrete.... Flexible school heating.... Low-cost glass wall (p. 160)

Eric Mendelsohn Three new synagogues by a world-famous architect (below and p. 105)

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In this attractive interior the door integrates with, rather than interrupts, the decorative plan of the room. Architect: John B. Danna, Dallas, Texas.

BRIEF DATA

Glass—⅜″ thick. Muralex pattern on both surfaces.

Tempered—Three to five times stronger than untempered glass of same thickness.

Reversible—Can be used right or left hand.

Standard Sizes—2′6″ x 6′8″ 3′0″ x 6′8″
2′8″ x 6′8″ 3′0″ x 7′0″

—also 4 sizes for openings of these dimensions with proper allowance for clearances.

THE BEAUTY OF IT IS . .

This door does more than open and close

It's plain to see that this door does a lot more than let people in and out.

It is a thing of beauty in itself—a lovely glass panel that carries out the decorative highlight of the room—a continuous translucent wall.

It is a Blue Ridge *Securit** Interior Glass Door—a single piece of translucent patterned glass made into a flush door of elegant simplicity.

The *Securit* Door combines beauty with many practical virtues:

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The Blue Ridge *Securit* Interior Glass Door is smart, really different. It is a key item to include in your plans for up-to-date interiors. For further information, see your L·O·F Glass Distributor or Dealer. Or mail the coupon. *®

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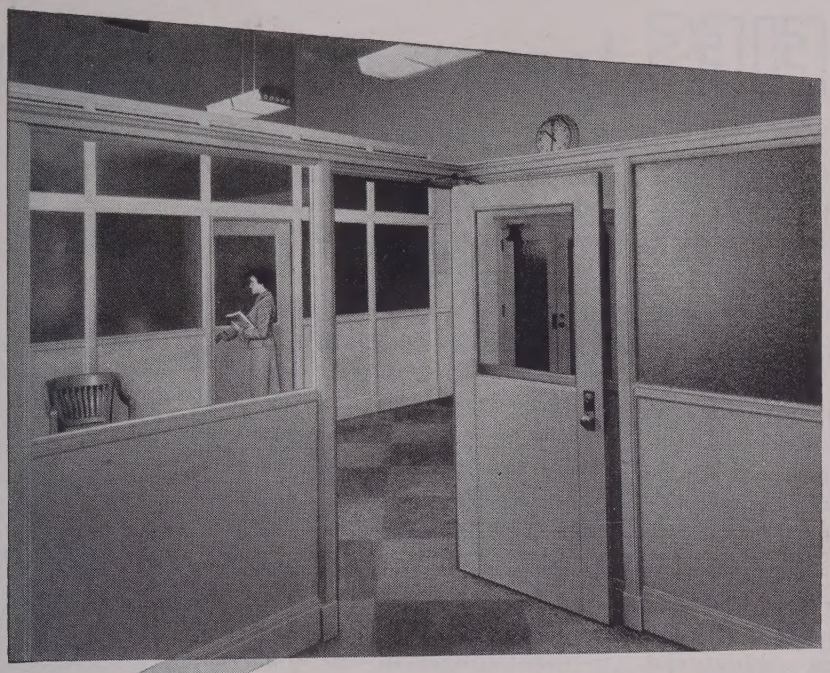
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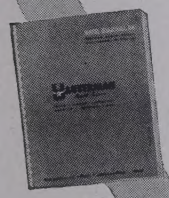
A leading South Bend manufacturer reports $59,333 Saved with Hauserman Movable Walls

With almost three miles of Hauserman *Movable* Walls installed in their main plant and offices since 1932, officials of this large Indiana company* have had ample opportunity to study the long-term advantages afforded by these modern cost-saving partitions.

Based on actual maintenance records, decorating savings *alone* have amounted to $22,625. Whereas their ordinary walls are repainted at regular five-year intervals, Hauserman *Movable* Walls still retain their like-new appearance . . . without repainting . . . *after more than twenty years.*

Like any company, large or small, this manufacturer must occasionally rearrange floor areas. Here, too, Hauserman *Movable* Walls have contributed heavily toward greater efficiency and operating economy. With a minimum of disturbance to normal routine, Hauserman Walls have been taken down, moved and re-erected—quickly and easily—*at a savings* of $36,708 over the cost of moving fixed walls.

That's the story. Doesn't it suggest an idea to you? *Name on Request



NEW DATA MANUAL 53 . . . most comprehensive collection of facts and technical information on movable interiors ever assembled. This 92-page guide for architects contains complete technical details, stock sizes, general instructions and specifications on *all* types of Hauserman *Movable* Interiors. Write for your free copy today. The E. F. Hauserman Company, 7131 Grant Ave., Cleveland 5, Ohio.

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A lobby scene of The Citizens National Bank of Lubbock, Texas.



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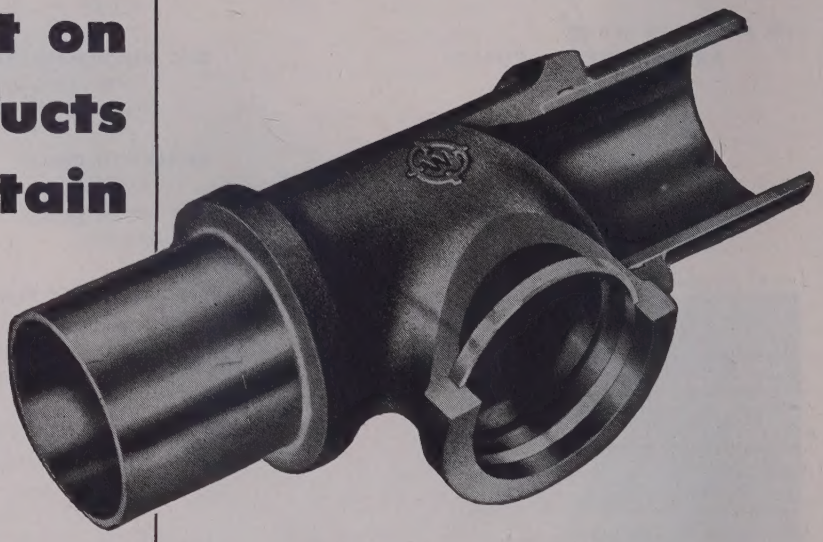
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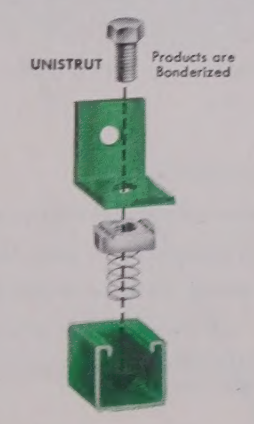
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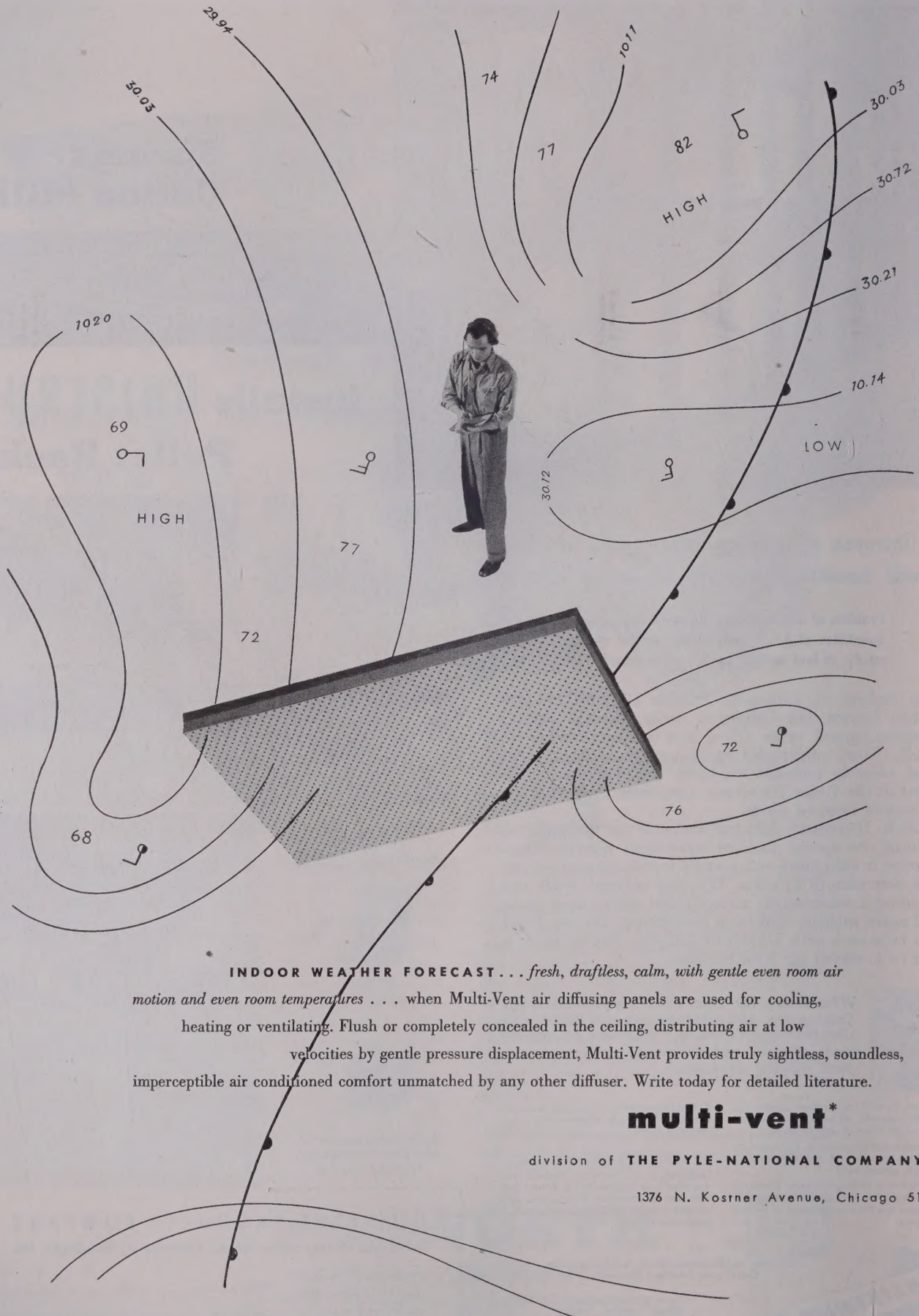
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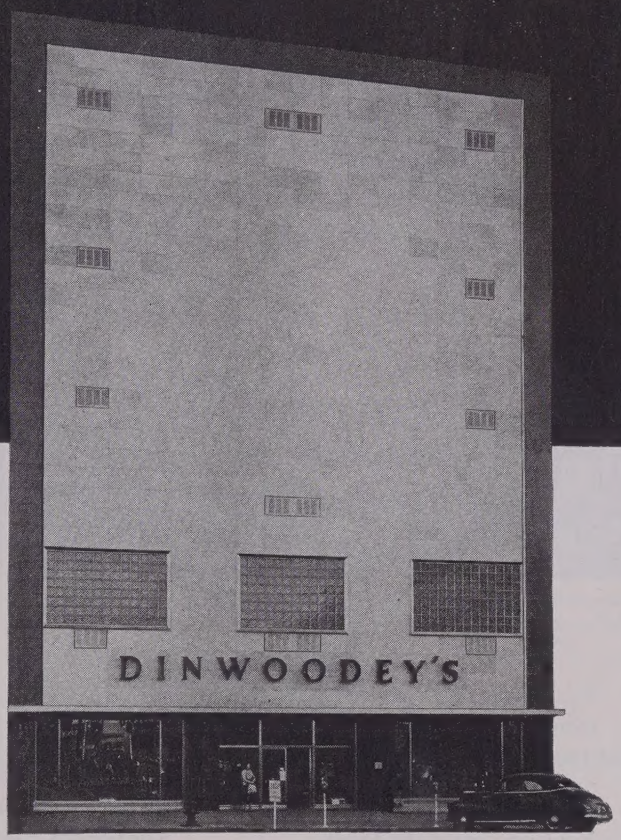
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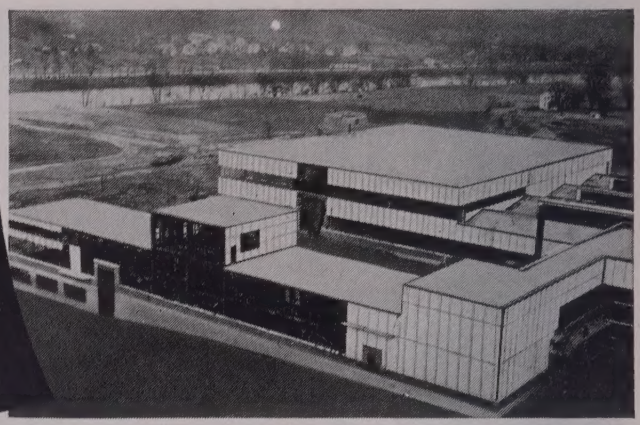
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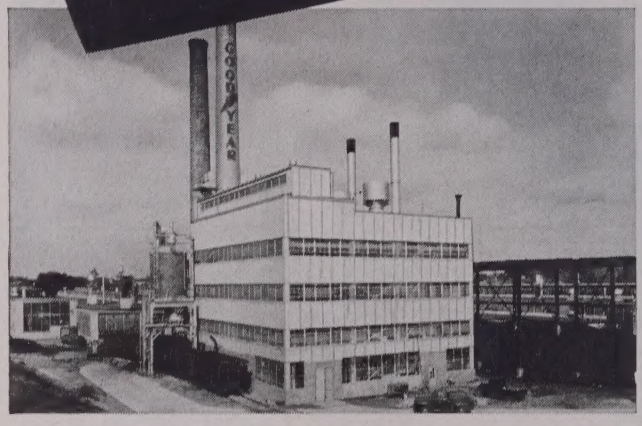
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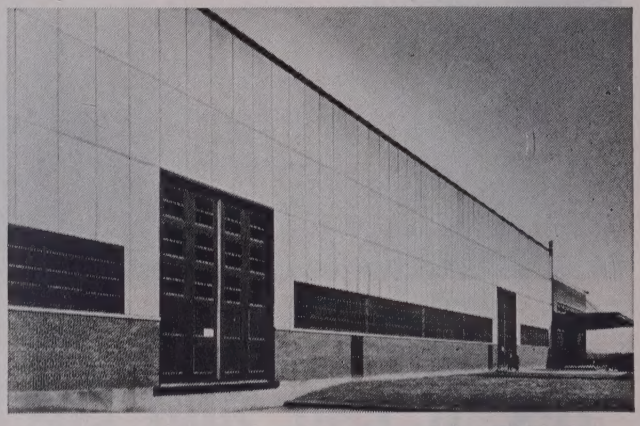
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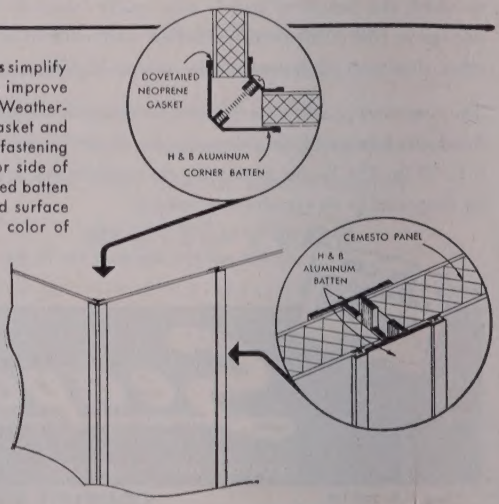
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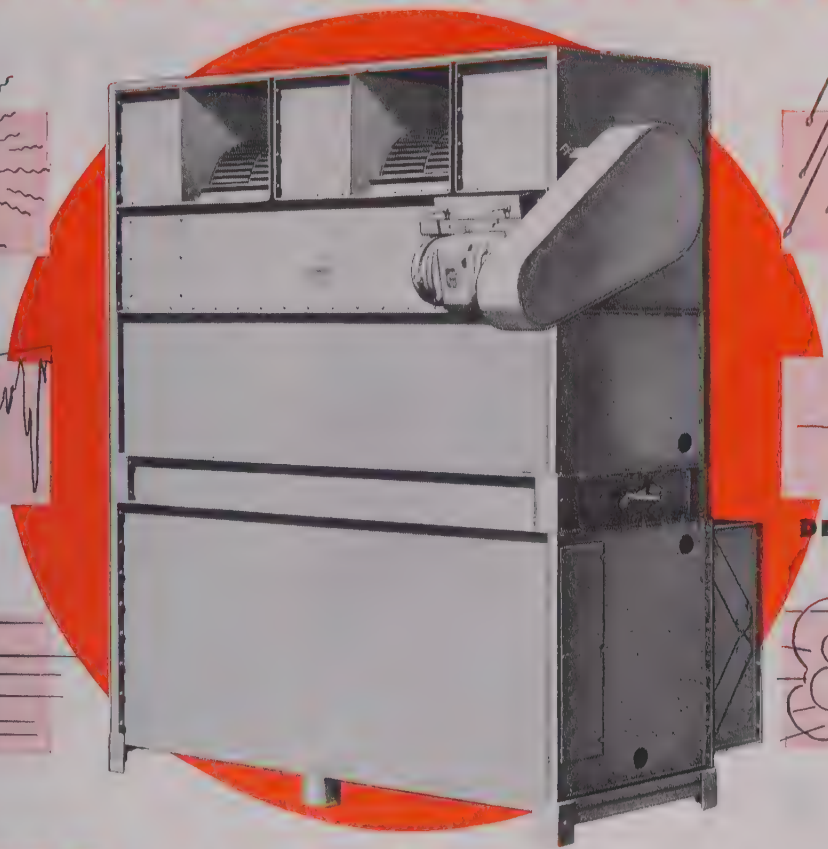
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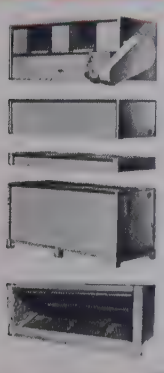
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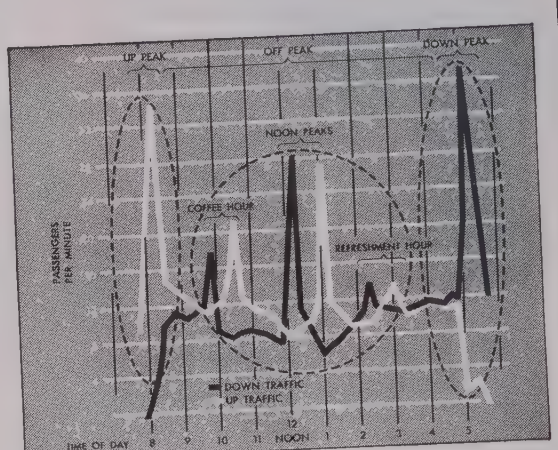
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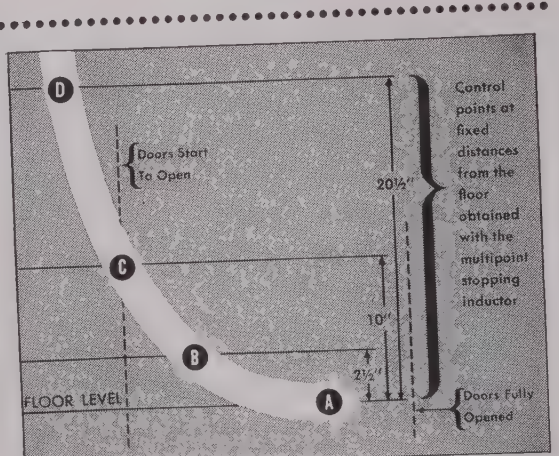
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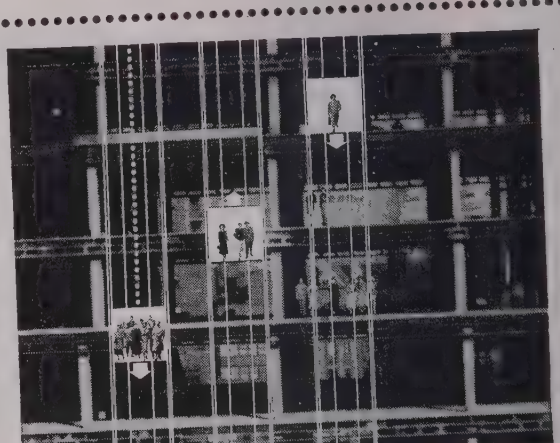
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is the outstanding veneer material for exterior walls

CARRARA Structural Glass has a smooth, gleaming surface that is mechanically ground and polished to an unusually high degree of lustre and beauty. It is made to withstand rigorous outdoor use, being weatherproof, durable and exceptionally easy to clean.

When used on exterior surfaces, Carrara is easy to install, permits true, even joints without lippage. And it is one of the very few *permanent* veneer materials that can be applied to building exteriors without the necessity for making expensive, time-consuming structural changes.

Because Carrara Glass is available in a wide range of attractive, non-fading colors and lends itself to a variety of decorative treatments, such as lamination, sandblasting or a "suede" surface finish . . . it provides the architect with unusual latitude of design possibilities.

For complete information, consult your Sweet's Catalog, or write to Pittsburgh Plate Glass Company, Room 3174, 632 Duquesne Way, Pittsburgh 22, Pa.

Architect: Charles E. Greenberg, New York, N.Y.



the quality structural glass

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PITTSBURGH PLATE GLASS COMPANY



For a refreshing shower with crystal-clear water and full-pressure... your home should have hot and cold water lines of Chase Copper Water Tube and Fittings.

Chase Copper Water Tube delivers a full flow of water. It can't clog with rust... it resists corrosion. Whether you're building a new home or replacing old pipe, use durable copper. For long life, at low cost, it's a far better buy than rustable pipe.

Ask your architect, builder or plumbing contractor about Chase Copper Water Tube. It's available through Chase plumbing and heating wholesalers served by 23 Chase warehouses across the nation. Chase Brass & Copper Co., Incorporated, Waterbury 20, Conn.

Chase

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BRASS & COPPER

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ANOTHER CHASE QUALITY STORY

This compelling ad is one of a series telling the Chase quality story to 15,872,000 readers of the Saturday Evening Post and other national magazines. It sells your clients on the quality of your services when you recommend Chase Copper Water Tube and Fittings.

CHASE BRASS & COPPER CO., WATERBURY 20, CONN., Warehouses and Sales Offices at:— Albany† Atlanta Baltimore Boston Chicago Cincinnati Cleveland Dallas Denver† Detroit Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York Philadelphia Pittsburgh Providence Rochester† St. Louis San Francisco Seattle Waterbury (†sales office only)



Apartments *Offices* *Hotels* *Hospitals*

No building too

ductless UniTrane



ACCURATELY RATED AND TESTED

Every UniTrane unit is carefully designed, manufacture and tested to conform with published TRANE capacit ratings. Units require no maintenance other than sem annual check-ups of oil cups and filters. Sturdy, die-forme steel cabinets are designed to withstand years of service



for individual room control o

MANUFACTURING ENGINEERS OF HEATING, VENTILATING AND AI

large...few too small for

room-controlled air conditioning

Provides advantages of central system plus best features of the unit system!

's different! The UniTrane System of air conditioning ffers advantages of a central system PLUS quiet, com-ressor-free room units that cool or heat, dehumidify, entilate, filter and circulate the air . . . and all this ithout the use of central system ducts!

ach tenant is boss—Because UniTrane provides indi-idual room control, it meets widely varied demands in rge office buildings, hospitals, hotels and commercial uildings down to small apartments and motels. Each enant sets the temperature and ventilation of his room ist as *he* wants it, without affecting any other room.

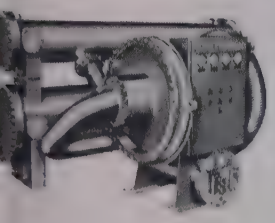
ig space saver—UniTrane saves space in many ways. ts single piping circuit handles chilled water in summer, ot water in winter. Ventilation air is introduced di-ectly through the wall into the individual room units. he compact room units are only 25-inches high . . . can e recessed under windows. Large equipment rooms and ccompanying ductwork are eliminated.

Accurate design data—Designing a UniTrane System is essentially a matter of selecting accurately rated units for the various rooms and zones. No multi-room build-ings are too large to permit UniTrane air conditioning in each individual room.

Simple and flexible—UniTrane is nearly as simple to install and operate as is a standard heating system. It can easily be extended to new building additions. You can shift units or add units to meet changing require-ments. You can install UniTranes for heating only and add central water chilling equipment later. You can shut off rooms and sections not being used. Even par-tially finished or partially occupied buildings can have complete room-controlled air conditioning with Uni-Trane.

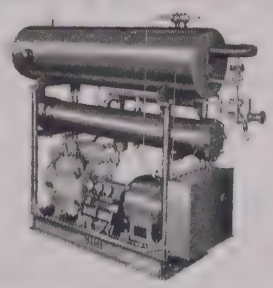
For complete information, contact your Trane Sales Office or write The Trane Company, LaCrosse, Wisconsin, for Bulletin DS 420.

or over 50-room UniTrane installations . . .



CENTRAVAC A complete centrifugal water chilling system, hermetically sealed. Five models from 45 to 200 tons. Automatic throttling controls permit efficient operation down to 10% capacity. Power consumption closely pro-portionate to load through entire range.

For 10 to 50-room UniTrane installations . . .



COLD-GENERATOR This unit delivers chilled water from one compact pack-age . . . brings you a com-plete refrigeration cycle, factory engineered, facto-ry assembled, factory tested, factory guaranteed! Only simple plumbing and electrical connections needed to install.

TEMPERATURE
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TRANE UniTrane

ONDITIONING EQUIPMENT The Trane Company, La Crosse, Wis. • East. Mfg. Div., Scranton, Penn. • Trane Co. of Canada, Ltd., Toronto • 87 U.S. and 14 Canadian Offices

So many ways to use... this abundant ability wood



Bevel and bungalow sidings of West Coast Hemlock excel in all the requirements of a beautiful, durable outside wall covering.



Interior walls paneled with bevel siding of West Coast Hemlock give this room a distinctive and novel atmosphere.

Weyerhaeuser 4-Square WEST COAST HEMLOCK

The Ability Wood

Those who are working with West Coast Hemlock know it is strong, easy to cut and fit, and remarkably free from checking and splintering. In comparison with other species, this ability wood also is distinguished for its fine texture, straight grain and freedom from pitch. These qualities—and other features—make West Coast Hemlock one of our finest, most popular soft woods.

Fortunately, there are abundant stands of this superb ability wood on the West Coast . . . in a climate which produces superior Hemlock.

Properly kiln-dried, and carefully manufactured by Weyerhaeuser, 4-Square Hemlock has great merit as a dependable soft wood. It is manufactured in bevel siding, bungalow siding, flooring, framing, ceiling, drop siding, sheathing, boards, paneling, moulding and other items. These products are used interchangeably with other multi-purpose, softwood species.

Because Hemlock is such a remarkably versatile wood, architects and their clients see many practical and beautiful applications for this fine West Coast species. Descriptive literature detailing the characteristics and uses of Weyerhaeuser 4-Square Hemlock is available on request.

PROPER PROCESSING OF HEMLOCK

● Weyerhaeuser takes this abundant ability wood and through scientific logging, accurate sawing, controlled kiln-seasoning, precision surfacing, proper grading, careful handling and shipping, produces a wide range of 4-Square West Coast Hemlock lumber products.

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UTILIZE THE BEAUTY OF HEMLOCK . . . *THE ABUNDANT ABILITY WOOD*



Building and signs designed by Van Soiver, Parcher & Falk, Philadelphia, Pa.

SIGN MATERIAL FOR ARCHITECTS . . .

PLEXIGLAS

The signs shown above illustrate how PLEXIGLAS acrylic plastic can be used to harmonize a building's signs with its architectural design.

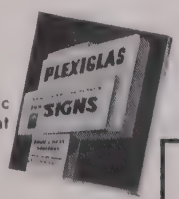
Note how the PLEXIGLAS faces and letters complement the appearance of the restaurant . . . how the use of the plastic in corrugated form provides textural contrast with the rough stone pylon on which one sign is mounted.

Note, too, how the use of backlighting with the translucent plastic turns the signs into completely luminous beacons at night, and eliminates exterior lighting sources that would mar the signs' gleaming, colorful, daytime appearance.

There are additional advantages in the use of PLEXIGLAS as a sign material.

- Design flexibility . . . the acrylic plastic can be formed into three-dimensional letters, pictorials, trademark and product reproductions.
- Strength, dimensional stability, resistance to weather . . . signs keep on looking their best through long outdoor service.

We will be glad to supply you with the names of local companies who are experienced in executing architectural sign designs in PLEXIGLAS.



Our new brochure, "PLEXIGLAS—The Outdoor Plastic —for Signs", tells the complete story. It will be sent promptly at your request.

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ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

PLEXIGLAS *is listed in Sweet's Architectural File, Section 6d/Ro.*

PLEXIGLAS *is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*

Canadian Distributor: Crystal Glass & Plastics, Ltd., 130 Queen's Quay at Jarvis Street, Toronto, Ontario, Canada.





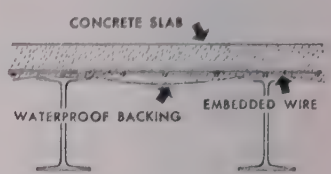
Broad decks of this modern function-engineered school poured over STEELTEX FLOOR LATH

When architect J. Robert F. Swanson and his staff at Swanson Associates in Bloomfield Hills, Michigan, set out to design the splendid new Birmingham, Michigan, Senior High School, they did far more than simply construct a handsome structure to house a specified number of students. For two years they joined in study with Birmingham school officials to exactly determine local educa tional philosophy and objectives, and crystalized their thinking with an on-the-spot survey of the best school facilities throughout the free world. The result was a low, wide-spread campus-type of structure, requiring many thousands of feet of concrete decks.

The architects specified that the concrete be poured over Steeltex Floor Lath, and they did so for very good reasons. The strong welded-wire mesh added great strength to the slab, while the tough water-proof backing permitted work on the floor below and assisted in proper curing of the concrete. These inherent virtues tended to allow greater latitude in deck design.

If you are not completely familiar with the use of Steeltex in concrete floor construction, it may well be of profit to you to contact us or consult our catalog data in Sweet's before designing your next structure. For details, write for Catalog D.S. 133, Dept. AF, Pittsburgh Steel Products Company, Grant Bldg., Pittsburgh 30, Pa.

Note, in the cross-section and close-up that the weight of the wet concrete forces the backing away, which permits the galvanized welded wire mesh to assume its proper position in the slab. Steeltex Floor Lath also performs two other functions. It permits work on the floor below while pouring is in progress and retains moisture to assist proper curing.



Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company



Historical American Landmarks

are Safeguarded and Beautified with **MEDUSA WHITE**



Independence Hall

In the recent restoration of Independence Hall in Philadelphia, Medusa White was used to repoint the masonry work.

The United Nations Permanent Headquarters

Medusa Waterproofed White was used recently for setting and pointing the marble, for back-up brick work, and in the terrazzo in the main lobby of this international landmark.

Washington Monument

Years ago when the Washington Monument was restored, its marble joints were pointed up with Medusa White Non-Staining Portland Cement mortar. The grout was neat cement and water, of a very thin consistency.

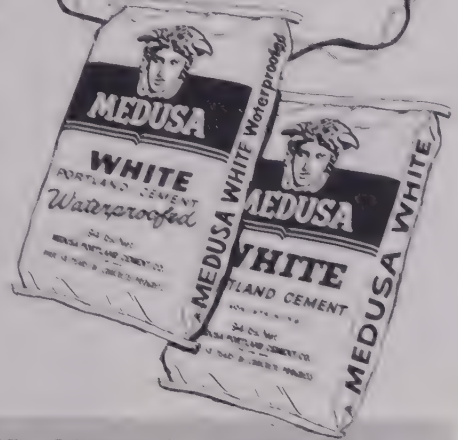
● When architects and builders are called upon to build or restore historical landmarks the selection of materials must be on a sound basis of proved dependability. Medusa White Portland Cement, the original white cement, is one of those dependable materials that is chosen over and over again to help construct, restore and protect historical buildings like those above.

For 47 years Medusa White (plain or waterproofed) has been used to give construction a distinctive and permanent beauty. No other cement has ever equalled its white color—a white that's diamond blue—not pink or yellowish in cast.

Specify this famed non-staining white cement plain or colored in those jobs requiring the most attention and confidence. Use it in cast stone, stucco, pre-cast concrete slabs, terrazzo floors. You can depend on the white of Medusa White.

MEDUSA WHITE

The Diamond Blue White Cement



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once and for always . . .

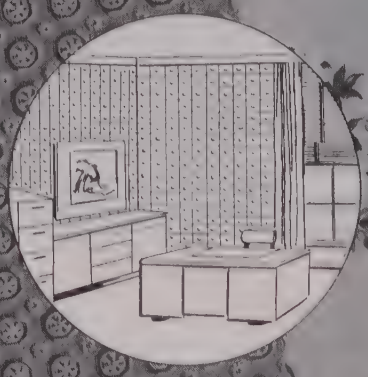
Cut down the staggering cost of cleanliness

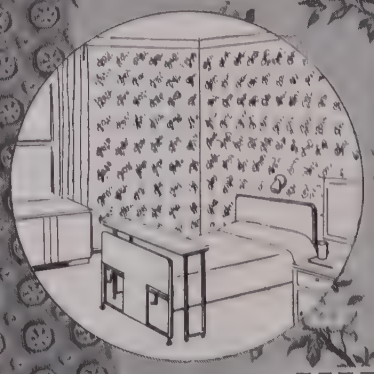
with **dirt-defying**

VARLAR

Stainproof Wall Covering







Cleanliness is a MUST in today's hospitals, hotels, business and industrial buildings. Dirt is an eve present expense that sends operating costs far too high. Far-sighted architects, builders, building managers and maintenanc superintendents are clipping this item to the minimum with VARLAR . . . the beautiful, practical and functional wall covering that *does not stain* . . . that can be WASHED CLEAN with just plain soap and water . . . *and up to 25,000 tim without injury to surface or colors.*

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Varlar resists staining from smoke, grease, hair oil, food stains, crayon, lipstick, ink, Mercurochrome. These, and many more soil hazards to ordinary decorating, simply WASH OFF with soap and water. Varlar is fadeproof, verminproof, fire-resistant, unharmed by salt water, steam.

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Available in wide range of beautiful decorator patterns and colors. It goes on like wallpaper with a special adhesive that seals it to the wall. No Varlar has ever had to be replaced because it ceased to be beautiful, practical and economical on the wall.

Find out for yourself how VARLA Stainproof Wall Covering can solv high cost of cleanliness for YOU. Send for FREE testing samples.

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Please send FREE TESTING SAMPLE and full information o VARLAR Stainproof Wall Covering. I am particularly inte ested in VARLAR for

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Stainproof Wall Covering
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United Wallpaper, Inc., Merchandise Mart, Chicago 54, Illinois

CUT HEATING AND AIR CONDITIONING COSTS!

with "SCR*" Insulated Cavity Wall"

- weathertight,
- economical,
- beautiful



In any building designed to provide years of dependable service on a low operating budget, "SCR Insulated Cavity Wall" construction will pay for itself many times over. Here's why—

1. **Increases Weather Protection.** With Fiberglas** Cavity Wall Insulation —Pouring Type—this wall has a tested U value of .12...a guarantee of lighter loads for heating and air-conditioning equipment. This insulating material is non-absorbent, won't form a bridge across the cavity for moisture penetration.

2. **Cuts Finishing Costs.** Because this wall is so weathertight, you can take full advantage of the durability and beauty of brick and tile—indoors as well as out. There is no need for furring and lathing—plaster may be applied direct, or the inner wythe of brick or facing tile may be left exposed.

3. **Builds Easily.** Structurally, the "SCR Insulated Cavity Wall" is the same as conventional cavity walls of brick and tile, meets similar building code requirements. The Fiberglas insulation is light, pours easily, resists settling.

For full data and specifications on "SCR Insulated Cavity Wall" construction, just write us on your own letterhead. Address Dept. AF-4.

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PEELLE-RICHMOND



The thinking and experience that produced these special purpose doors





Peelle-Esavian Door BRISTOL AEROPLANE ASSEMBLY PLANT Filton, England

The front of this huge, three bay hangar presents a continuous opening of 1045' in width and 55' 9" in height. To close this opening it was necessary to build one of the largest doors in the world consisting of 4 pairs of sliding folding aluminum covered sections. Motive power is housed in the power mullions at each leading edge of the door structure.

The Peelle Esavian Door is based on an entirely new principle which eliminates the necessity for expensive structural features in the building. The entire weight of the door is carried on the bottom track and the motivating power is on the door. This door offers many unique advantages particularly for large openings of unusual height.

Write for new Peelle-Esavian Brochure.

Jet Engine Test Cell Door PRATT & WHITNEY AIRCRAFT, East Hartford, Conn.
Albert Kahn Associated Architects & Engineers Builders: Turner Construction Company

To contain and deaden the roar of jet engines on test, Pratt & Whitney Aircraft had The Peelle Company design and build ten of these huge concrete and steel doors for its new jet engine test cell block. Big enough to admit the most powerful engines of today and the even bigger ones to come, these doors had to be built as thick as the walls of the cells themselves to control the enormous volume of sound produced by the engine while running. Constructed in place, these dense concrete doors weigh 33 tons each, yet their electric motor drive travels them horizontally at the rate of 30 feet per minute quite easily. And, from outside the closed door, only a muffled hum can be heard of the earth shaking roar of the jet engine running inside.

Motorized Door Measuring 34' x 35' NEHAREN GENERATING PLANT
Electric and Fuel Dept., Public Service Electric and Gas Company of New Jersey
Consulting Architects: Walker & Poe Builders: Lloyd Engineers & Constructors, Inc.

This towering stainless steel and glass door was engineered and built by The Peelle Company to carry out the architectural treatment of the building and to satisfy the engineering requirements. These vertical lifting panels at the door are counter-weighted and are operated by a 5 cog variable speed head reducing unit with brake. Door panels move at varying speeds to open simultaneously at each portion.

This is one of many types of motorized doors and partitions designed and built by The Peelle Company for factories, power stations, warehouses, terminals, hangars, mills, garages, hospitals and schools. Peelle Engineered Doors merit consideration in your plans.

Engineered Doors



Richmond Metal Clad Fire Doors



Richmond Flush Fire Doors

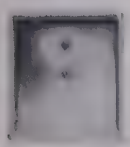


Richmond "HD" Industrial Doors



Richmond Steel Door Frames

FIRE DOORS Frames and Hardware



Peelle Counterbalanced Doors



Peelle Counter Balanced Freight Elevator Doors



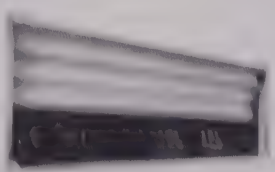
Peelle Waterproof Solid Panel Car Gates

ELEVATOR DOORS



Peelle Horizontal Sliding Doors

Peelle Vertical Sliding Doors



INDUSTRIAL ENTRANCE DOORS

are behind all Peelle-Richmond products

"it's **PEELLE** *engineered*"

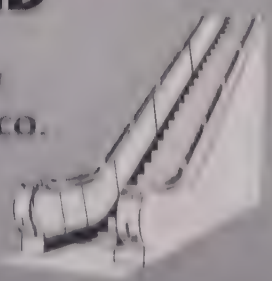


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THE PEELLE COMPANY
47 STEWART AVENUE, BROOKLYN 37, N. Y.

THE RICHMOND FIREPROOF DOOR CO.
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MANUFACTURERS OF THE PEELLE MOTORDOR



made to outlast

any hospital... cut maintenance too!

In times like these it's just good business to take a second long look when selecting windows for your hospital buildings.

Cost, of course, is a factor, but the WAY Cost is figured is the important thing.

How long will the windows last?

What about maintenance?

Those two questions are keys to better buying and here Ceco-Sterling Aluminum Double-Hung Windows win on both counts. Made of ageless aluminum, they give rugged life-time service . . . will outlast any hospital . . . won't rust, rot, warp, or swell . . . permanent weather seal . . . nothing make-shift . . . nothing to deteriorate, wear out or replace.

When it comes to maintenance Ceco-Sterling Aluminum Windows deliver a plus value. No painting is necessary and cleaning is a mere matter of wiping.

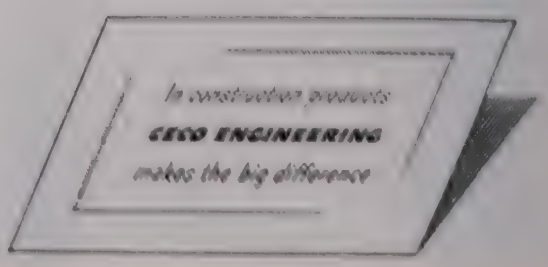


Here is Ceco-Sterling **Double-Hung** Aluminum Window, series 200-B

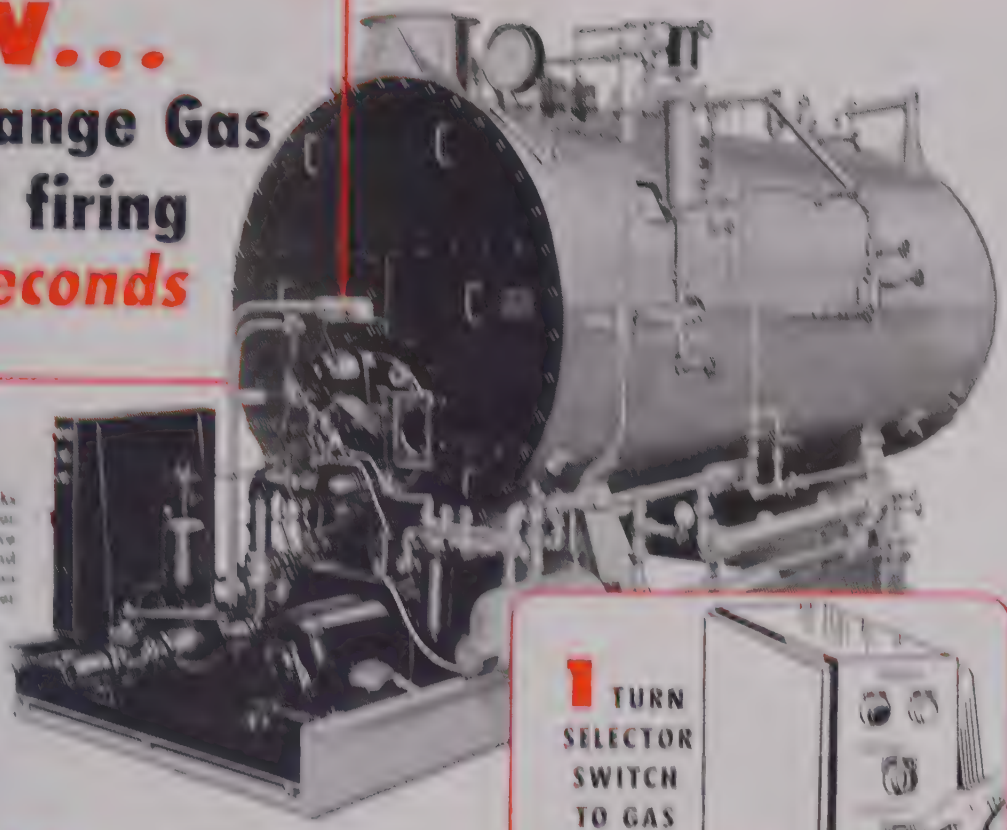
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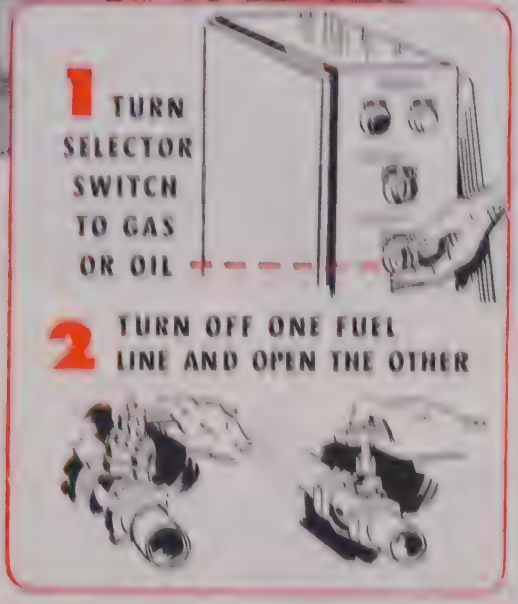
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NOW... interchange Gas and Oil firing in *10 seconds*



Modern Cleaver-Brooks Model CB Steam Boiler Equipped with Exclusive Cleaver-Brooks "10-second" changeover Combination GAS and/or OIL Burner



TWO, simple motions eliminate time-consuming change-over

Now you can use oil or gas at the flick of a switch! This exclusive new Cleaver-Brooks development permits changeover from oil to gas or vice versa in only 10 seconds.

That's because the Cleaver-Brooks Combination Gas and or Oil Fired Boiler operates on gas *with the oil burner in place*. Simply flipping a selector switch on the control panel to either gas or oil sets the proper circuit in action. Turning the convenient fuel supply valves completes the entire changeover — and in 10 seconds or less!

To gas users in all parts of the country — and in particular areas where local requirements demand immediate changeover — this exceptional fuel flexibility can be an important factor in determining your overall operating economy.

Ten-second conversion, like 3-pass construction, self-contained design, guaranteed 80% efficiency, is another "plus" feature pioneered by Cleaver-Brooks. It demonstrates Cleaver-Brooks' continuing effort to bring steam users even greater flexibility and reduced operating costs.

If you are considering simplifying your present boiler plant, remember Cleaver-Brooks Combination GAS and or OIL Fired Boilers. Sizes 15 to 500 h.p. — 15 to 250 p.s.i. Write for complete facts.

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In Response to a Growing Demand

from ARCHITECTS, ENGINEERS and BUILDERS—



ABOVE—Interior of First Lutheran Church, Seattle, Wash., with Sonotube-formed concrete columns.



ABOVE—Sonotubes were used for fast, inexpensive construction of this railroad siding platform.



PHOTO BY JOS. W. MOLITOR

ABOVE—Le Bonheur Children's Hospital, Memphis, Tenn. An outstanding example of economical Sonotube-formed columns. J. Frazer Smith & Associates, Architects and Engineers, Memphis. Harmon Construction Co., Oklahoma City, contractor.

ROUND COLUMNS of CONCRETE

FORMED WITH



LAMINATED FIBRE FORMS
For one-time use

Saves TIME—
Saws easier than wood!

Saves LUMBER—
Requires minimum bracing!

Saves LABOR—
Lightweight, easy-to-handle!

Saves MONEY—
Lower initial cost!



ROTHSCHILD PHOTO

ABOVE—University of Southern California, Woman's Dormitory. Note flush electrical outlets at column base. With Sonotube, it was a simple operation to set the conduit and outlet box in place before pouring. A functional advantage that does not detract from the natural beauty of the round column.

Sonotube®

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FIBRE FORMS
For Round Columns of Concrete

At Lower Cost!

3 Now Available in NEW SIZES!
26"-30" and 36" I.D.

completing a full range
of sizes from
1" to 36" I.D.

See Our Catalog in SWEET'S



REQUIRES MINIMUM BRACING—
CAN BE SAWED ON JOB!

ABOVE—A Sonotube-formed concrete column with cap. Detailed instructions available upon request.

SONOTUBE fibre forms—now up to 36" I.D.! Here is a widely job-tested and approved method of forming concrete columns at lower cost. Sonotubes are being used by architects and contractors all over the country, in projects involving concrete columns, piers, piles, underpinning, etc. 21 sizes—1" to 36" I.D., up to 24' long—or longer on special order up to 50 feet. Can be sawed to exact lengths on the job. Complete technical data available. Write for detailed literature and nearest source of supply.

Hard-to-get-to places made easy to reach. Note minimum bracing



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LOS ANGELES, CAL. · BRANTFORD, ONT.

When you plan a new school, remember that there's one building material that will help you keep costs in line by doing double-duty. It's versatile Stark Glazed Facing Tile—

The interior finish that meets

STARK

FOR MINIMUM MAINTENANCE COSTS

Walls of Stark Glazed Facing Tile always keep their "just built" appearance, never fade, crack or craze. They eliminate the cost and inconvenience of refinishing big wall areas—for the life of the building.

FOR CLEANLINESS

This glass-hard, impervious surface cleans easily with soap and water, will never stain or harbor odors—there's no place for dust or dirt to hide.

FOR CONSTRUCTION SAVINGS

Stark Glazed Facing Tile is made in large-size, modular units. It goes up fast, gives you a fireproof, load-bearing wall and a decorative finish in a single operation.

FOR "COLOR-ENGINEERING"

Stark offers a wide range of colors scientifically developed to aid any school task. You can choose one color to improve vision in classrooms, others to create a bright, cheerful atmosphere in multi-purpose rooms or cafeterias. There's a Stark color for every school requirement.

Get this Valuable Free Brochure

Prepared to help you use Stark Glazed Facing Tile to best advantage. Includes a complete color chart, construction data, details, sizes, etc. Just write us on your letterhead. Address Dept. AF-4.

QUALITY FACING TILE — FTI — Member of FACING TILE INSTITUTE

Stark Ceramics, Inc. *Canton 1, Ohio*

14305 Livernois Avenue, Detroit 4, Michigan

15 East 26th Street, New York 10, N. Y.

very school building need

glazed facing tile



LINCOLN ELEMENTARY SCHOOL, STERLING, ILL.
LOUIS SINGLEY AND ASSOCIATES, ARCHITECTS AND ENGINEERS
NORMAN CONSTRUCTION COMPANY, GENERAL CONTRACTOR

rridors in this school are brightened by
olor engineering"—with a wainscot of
ht-reflecting, durable Stark Glazed
cing Tile. (above.)

this multi-purpose room, full walls of
rk Glazed Facing Tile are used to cut
intenance costs and improve lighting
e colors: brown wainscot, light green
per wall, sunlight yellow. (right.)

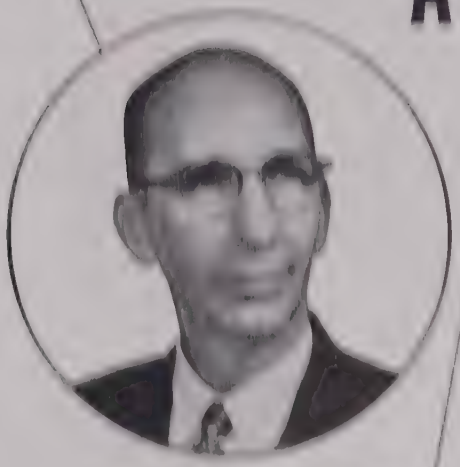


OPEN YOUR DOORS...

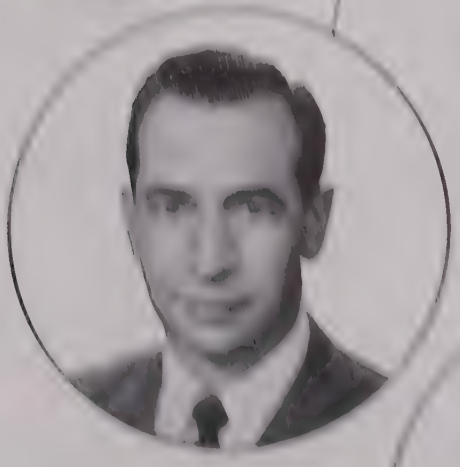
to your CORBIN

Architectural Hardware Consultant

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Huff Hardware Company
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New Orleans, Louisiana



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Years of close contact with the builders' hardware problems which confront architects, engineers, and contractors have made these Corbin consultants among the top men in their field. In your locality there is a Corbin representative of similar high caliber who will gladly work with you in the selection of builders' hardware. For his experience, integrity and know-how to work for you.

CLOSE YOUR DOORS

with the CORBIN "400" Door Closer...



AVAILABLE FOR IMMEDIATE DELIVERY!

HAS NO EQUAL FOR STRENGTH . . . Here's the door closer that combines superior strength with pleasing appearance. It is the strongest, most versatile door closer made. Yet it is so compact that it projects a mere 1¼" from the door face.

The Corbin "400" Door Closer, made with one size housing in 7 spring sizes, effectively handles any door closer installation, even where exceptionally strong drafts are encountered.

4 SPEED CONTROL AND SILENCE ADJUSTMENT . . . The Corbin "400" Door Closer offers 4 different combinations of speed control plus a Silence Adjustment that hushes the closing operation so effectively that there is no audible contact between door and stop. In addition, the "400" has a built-in hold open device for 12 different positions. Double link arms are available.

Corbin "400" Door Closers are in stock for immediate delivery. Speedy close action, top performance and handsome appearance are the key requirements.

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The World's most widely used BUILDERS' HARDWARE

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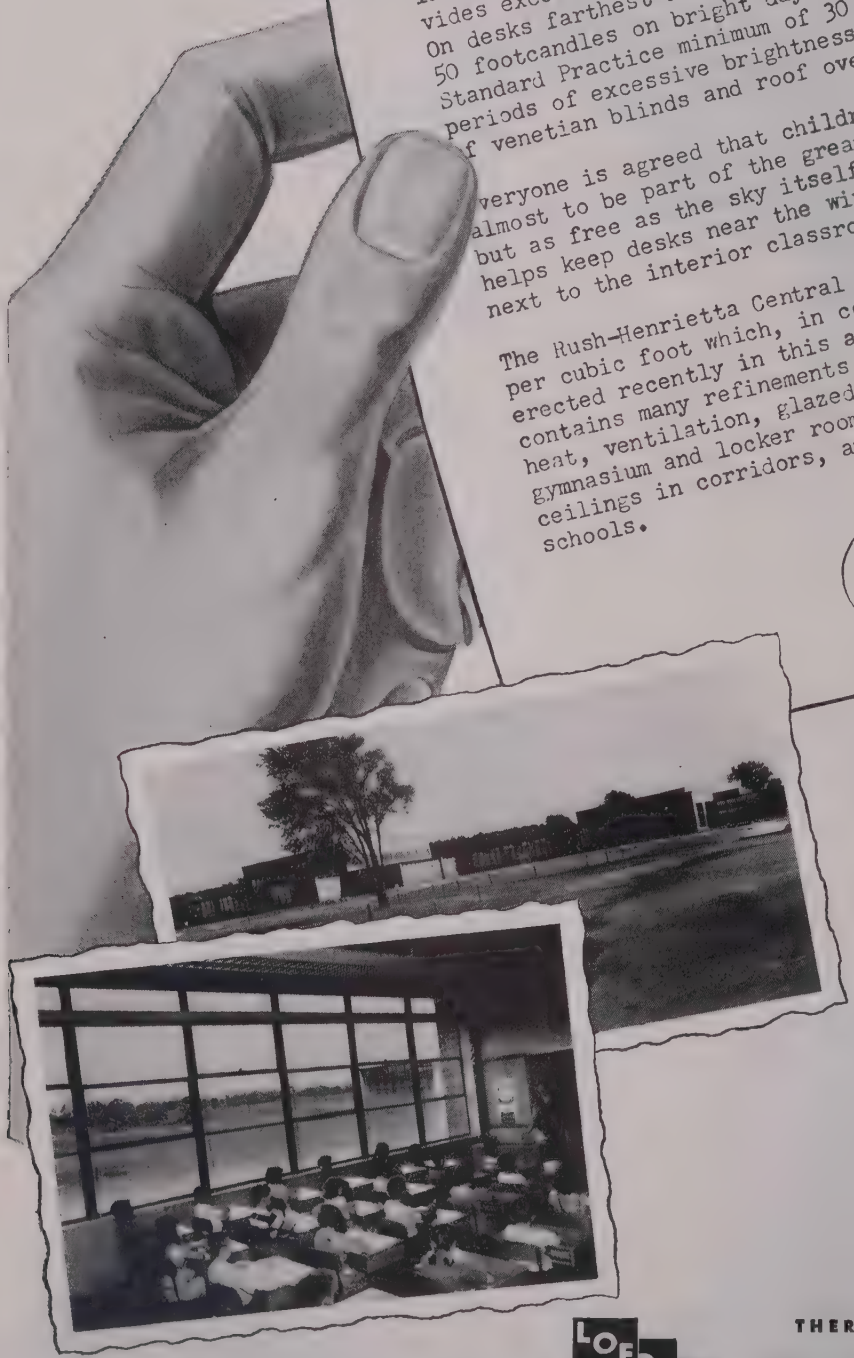
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ARCHITECT
840 UNIVERSITY AVENUE
ROCHESTER 7, NEW YORK

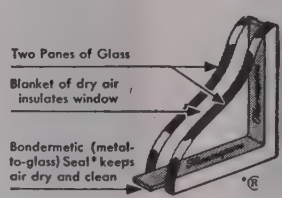
The high level of natural daylight admitted by the large Thermopane insulating glass windows in the Rush-Henrietta Central School provides excellent illumination throughout the classrooms all day long. On desks farthest from the windows we get light meter readings of 50 footcandles on bright days. That is well over the accepted American Standard Practice minimum of 30 footcandles. On sunshiny days, during periods of excessive brightness, light is easily controlled by means of venetian blinds and roof overhang.

Everyone is agreed that children love these bright rooms that seem almost to be part of the great outdoors. They don't feel shut in, but as free as the sky itself. Furthermore, the insulating glass helps keep desks near the windows as comfortable in winter as those next to the interior classroom wall.

The Rush-Henrietta Central School was built at a cost of 62 cents per cubic foot which, in comparison with most other public schools erected recently in this area, is quite low. Yet the building contains many refinements and modern improvements, such as radiant heat, ventilation, glazed tile wainscote in classrooms, corridors, gymnasium and locker rooms, terrazzo floors and metal acoustic ceilings in corridors, and insulating glass not commonly found in schools.

Benedict M. Ade





Thermopane Details

*Thermopane** insulating glass with ½" of dry air hermetically sealed between two panes has twice the insulating value of single glass. This minimizes chilliness, drafts and heat loss at windows. *Thermopane* also cuts air-conditioning costs by reducing the amount of heat entering during summer. It cuts out 44% more noise than single glass.

Write for the latest literature on school daylighting, *How to Get Nature-Quality Light for School Children.* This brief booklet is factual, detailed, authoritative, written for architects. Also, write for the latest *Thermopane* literature for your file. *®

LIBBEY • OWENS • FORD GLASS COMPANY
4243 Nicholas Bldg., Toledo 3, Ohio

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THERMOPANE • PLATE GLASS • WINDOW GLASS

DAYLIGHT WALLS

THAT DON'T OBSCURE VISION

Other L·O·F Glass Products: Vitrolite* • Tuf-flex* Tempered Plate Glass • Tuf-flex Doors • Safety Glass • E-Z-Eye Safety Plate Glass • Fiber-Glass

AZPHLEX

. . . a new concept in greaseproof flooring



Azphlex in cafeteria of Robert B. Green Hospital, San Antonio, Texas

Better Grease Resistance—Smarter Colors—Same Low Cost!

Now you can specify floors with superior greaseproof qualities — at *no more cost* than ordinary grease resistant asphalt tile. Azrock's new Vinylized Azphlex is the difference — Azrock's new vinylizing process *makes* the difference.

Vinylized Azphlex has *new and greater grease resistance* to all kinds of greases and oils . . . new, distinctive colors, hitherto unavailable, that meet the decorative and light-reflectance requirements of today . . . *stepped up flexibility* for more strength . . . greater resilience for additional walking comfort — *new, smoother surface* that keeps floors looking cleaner — makes them easier to clean.

Before you specify floors for restaurants, cafeterias or any food serving area, find out more about Vinylized Azphlex. It's a NEW *concept in greaseproof flooring with wonderfully improved performance characteristics — but no increase in cost!*

UVALDE ROCK ASPHALT CO.

FROST BANK BUILDING • SAN ANTONIO, TEXAS

Makers of AZROCK • VINA-LUX • AZPHLEX • DURACO

AZROCK FLOORING PRODUCTS

"Azrock Makes Fine Floors"

Sanymetal*

*Trade Mark Registered

...uses the ageless and fadeless material

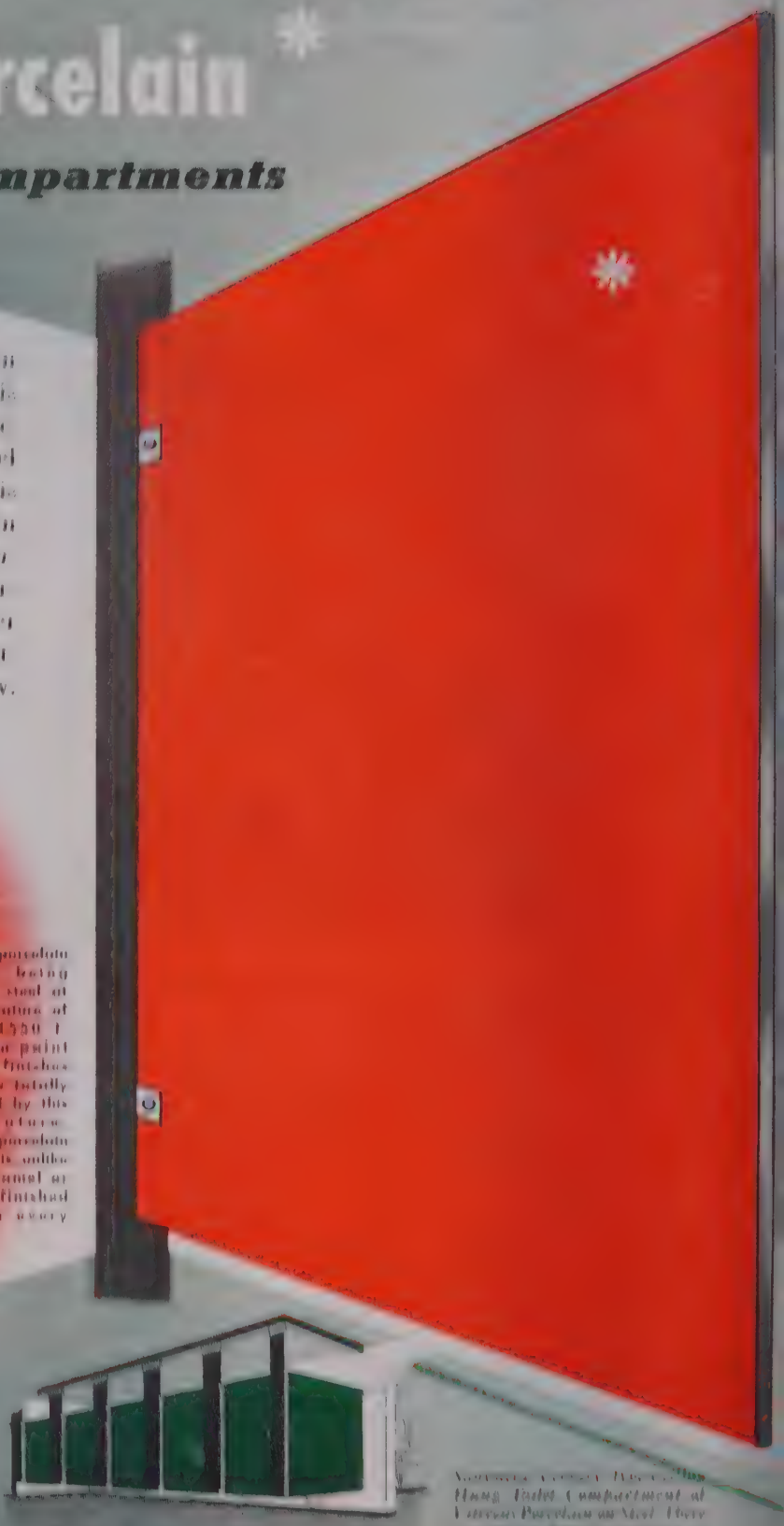
Vitreous Porcelain*

on steel for toilet compartments

(Sanymetal "Porcena" (Vitreous Porcelain on Steel) is a *material*, not merely a finish. It is in every aspect unlike *paint* enamel or lacquer finished steel because it is fused to steel at a temperature of 1350° - 1550° F. This impregnates the steel with vitreous porcelain enamel to the extent that it *cannot be hammered out*. Sanymetal "Porcena" (Vitreous Porcelain on Steel) is incomparable with any other material commonly used for toilet compartments. It is a lifetime material that stays new.



Vitreous porcelain enamel being fused to steel at a temperature of 1350° - 1550° F. Baked on paint enamel finishes would be totally destroyed by this temperature. Vitreous porcelain on steel is unlike *paint* enamel or lacquer finished steel in every respect



Sanymetal "Porcena" (Vitreous Porcelain on Steel) Hung Toilet Compartment at Vitreous Porcelain on Steel Door

Sanymetal ® *Vitreous Porcelain on Steel* Toilet Compartments possess enduring beauty, fadeless colors, structural durability, resistance to acids, defacement and abuse.

Vitreous porcelain on steel is a product of the white heat of the enameling furnace—a material that is as new as tomorrow and as old as time!

Sanymetal Engineers were the first to adapt vitreous porcelain on steel for toilet and shower compartments

a material that insures against untimely obsolescence

Vitreous porcelain on steel provides these features that ***cannot be duplicated by any other material suitable for toilet compartments:***

It is a non-porous material that greatly exceeds the structural strength and durability of other materials now available for toilet compartments. It is often acclaimed as a lifetime material because it consists of no elements that are vulnerable to gradual depreciation

It is impervious to moisture, odors, uric and other ordinary acids, oils and grease, and is scratch resistant

Its flint-hard, glass-smooth surface can be kept as immaculately clean as a china plate

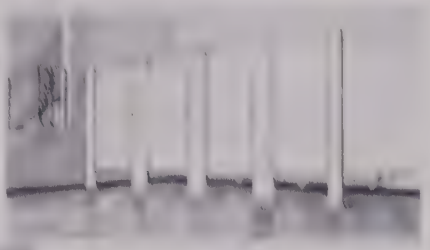
It reduces the cost of maintenance to an all time low.

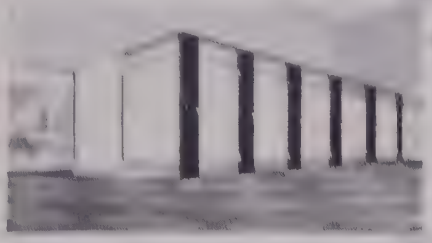
The glass-hard, lustrous finish of vitreous porcelain on steel does not fade, tarnish, peel or discolor. This surface is obtainable exclusive of scratching, scrubbing, scrubbing or defacement.

The original luster and freshness of colors is never lost. Its gleaming, colorful beauty does not fade or depreciate. It is truly an ageless and fadeless material

Sanymetal "Porcena" (Vitreous Porcelain on Steel) Toilet Compartments are available in several different styles and a wide range of fadeless colors. Only Sanymetal offers "Porcena" (Vitreous Porcelain on Steel) Toilet Compartments. Ask the Sanymetal Representative in your vicinity to demonstrate the unusual and exclusive features of Sanymetal Vitreous Porcelain on Steel Toilet Compartments.

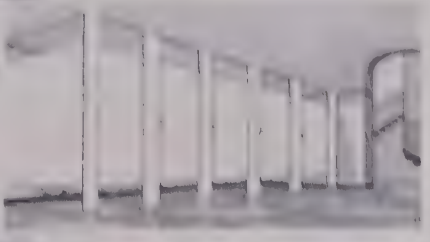
Sanymetal Normandie type toilet compartments endow a toilet room environment with dignity and good taste

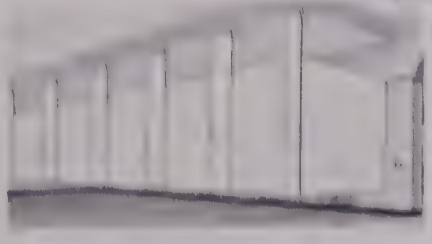




Sanymetal Academy type Shower Stalls and Dressing Room Compartments provide the utmost in sanitation for gymnasiums, stadium dressing rooms, Y.M.C.A.'s, clubs, trailer camps and factory units, etc.

Sanymetal Academy type toilet compartments are suitable for conservative but modern toilet room environments





Sanymetal Century type *Ceiling Hung Toilet Compartments* offer the utmost in sanitation and provide modern, distinctive toilet room environments for schools, institutions, terminals and other public buildings.

THE SANYMETAL PRODUCTS CO., INC.
1687 Urbana Road • Cleveland 12, Ohio

Sanymetal ®
(Trade Mark Reg. U. S. Pat. Off.)

Toilet Compartments, Shower Stalls and Dressing Rooms

Super-tough sanitary micarta® PLASTIC SURFACE shrugs off sliding dishes and food stains



MICARTA® is a wonderfully practical plastic top for table tops, counters, and work surfaces. It resists the continuous scraping and sliding of dishes and cutlery, stands up to spilled foods and liquids which tend to stain and rot ordinary tops. This amazing material can be wiped clean with just a damp cloth in a matter of seconds. The completely smooth surface of MICARTA offers no refuge for germs or loose particles of dirt and grease. The clean gleam of MICARTA tops makes whole eating areas seem brighter and more appetizing to diners. You just can't buy a better material for dealing with the constant flow of cafeteria traffic. Look into the long-lasting extremely attractive features of this better quality high-pressure plastic laminate. For the full story on MICARTA and its many helpful applications, fill out the coupon below.

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AF-4-53

TIGHTEST CLOSING
and WIDEST OPENING
WINDOWS EVER MADE...

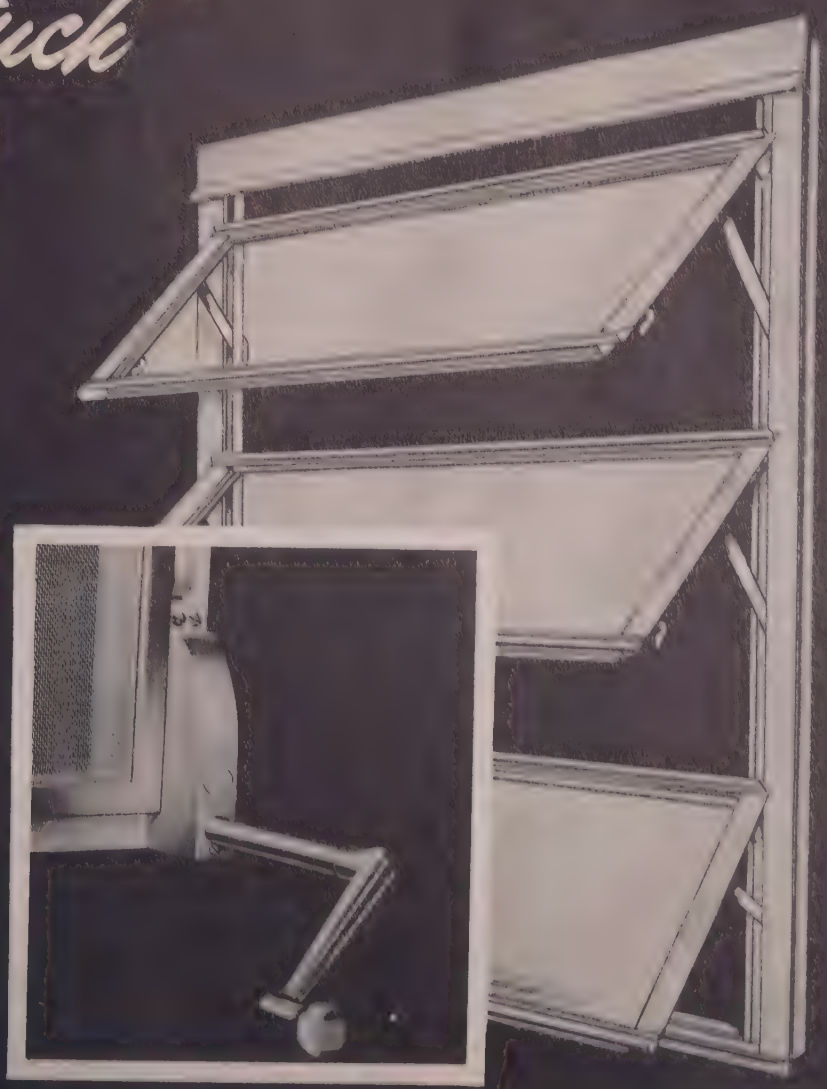
Now

LUDMAN
Auto-lok
AUTOMATIC LOCKING
WINDOWS
Aluminum or Wood

EASIEST TO OPERATE!

NEW *"feather-touch"*
OPERATOR

Now, **unequalled** ease of window operation! Ludman AUTO-LOK Windows open, close and automatically lock **at the mere touch of a finger!** No binding, no dragging over years of constant use. Handsome, unobtrusive operator handle is out of way of drapes, blinds and other window furnishings.



FOR THE FIRST TIME,
WINDOWS THAT GIVE YOU
all three!

LUDMAN LEADS THE WORLD'S WINDOW ENGINEERING

In less than 5 minutes

YOU can find out what these three great Ludman Auto-Lok features mean to you in terms of SUCCESSFUL INSTALLATIONS

Here are the reasons why Ludman Auto-Lok can offer you the *Guarantee* of a life-time of trouble-free operation...

Ludman design, research and engineering make AUTO-LOK Windows the most versatile on the market for **all** applications . . . commercial, industrial and residential . . . with control and operation features never before available in any other windows!

Auto-Lok hardware eliminates the wear at critical hinge points that results in vents that cannot be closed tight. In all other awning-type windows, force must be applied on the critical hinge points at the top of each vent in order to close the vents tight at the bottom. With patented Auto-Lok operation no destructive force is applied on hinges. Every vent in an Auto-Lok Window closes tight automatically—always. **The result: guaranteed no wear, no adjustments . . . ever!**

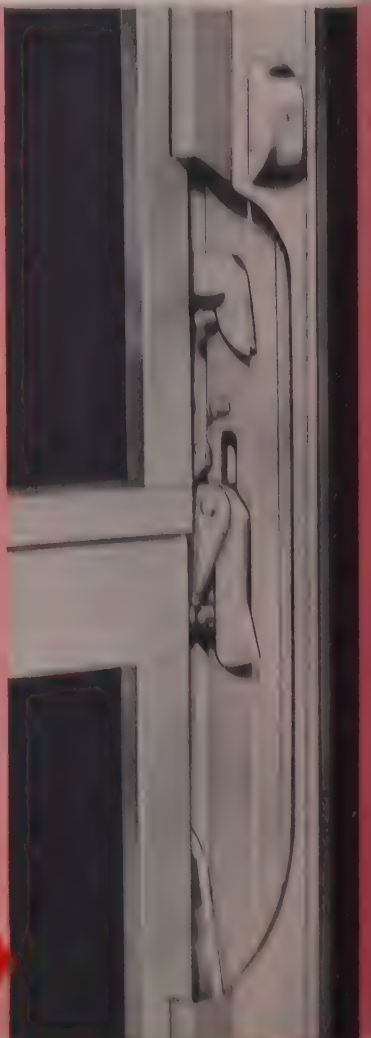
1 *Tightest Closing Windows Ever Made!*

Close Ten Times Tighter Than Generally Accepted Standards!...

Here's why: **(a)** While vents are swinging in toward the frame, the vertical operating bars at each side of window **move up.** **(b)** Note how lugs on operating bars engage hooks on vents as the bar moves up . . . applying the wedging action that pulls the vents in tightly against the frame. **(c)** The vents are pulled in snug, and pressure against vinyl weatherstripping assures a complete seal (like the door of your refrigerator). Automatic locking has commenced. **(d)** Final "locked" stage of AUTO-LOK operation...hooks have moved in, adding extra locking action near the bottom of the vents, on both sides . . . locking all four corners of each vent.

This action is entirely automatic and is accomplished during the normal, effortless turning of the operator handle. There is no destructive force on the hinge points . . . no periodic adjustments necessary to close vents tight against frames, and keep them closed tight.

New Center Safety-Lok in convenient center position, pulls bottom vent in tight and securely locks it...provides extra protection against intruders.



WATCH THE "HOOK" and THE "LUG" PULL IT SNUG!



2 Widest Opening Windows Ever Made!

AUTO-LOK Windows open to almost 90°... scoop in cooling breezes. 100% ventilation when you want it, but no drafts, ever! Air enters inward and upward.

The scientifically designed, slanting vents of AUTO-LOK Windows provide luxurious ventilation, even while it is raining. Rain can't enter, fresh air can!

With AUTO-LOK Windows, you can have an almost solid wall of windows, perfectly weather tight in inclement weather. You can shut out **all**, or as much of the "outdoors" as you desire . . . or, bring all of it "inside."

No wonder Architects, Contractors and Owners everywhere describe AUTO-LOK Windows as "the windows that make their own weather."



3 Easiest Operating Windows Ever Made!

While "operational ease" is undeniably a great convenience, its even greater advantage is the promise of a life-time of trouble-free maintenance . . . with no expense of the replacement of parts, and no loss of window efficiency due to wear!

The entire operating mechanism of AUTO-LOK Windows is so perfectly balanced, so well designed and engineered that no wear occurs ever! There is no strain or friction on any moving part . . . at any point. A small child can operate AUTO-LOK Windows with ease . . . so little effort is required.

AUTO-LOK's newly designed operator coupled with the exclusive, patented operating mechanism, results in operational ease heretofore not available in any other window. After years of constant opening and closing, there will be no "lag," no bind or drag in AUTO-LOK Window operation.



Here's Proof

LUDMAN Auto-lok

GIVES YOU EVERY FEATURE THAT IS IMPORTANT IN A WINDOW!

FEATURES	LUDMAN Auto-lok	DOUBLE HUNG	CASEMENT	SLIDING ACTION
1. Automatic Locking	✓			
2. Elasticmetic Vinyl Weatherstripping	✓			
3. Center Safety Lock	✓	✓	✓	
4. Feather Touch Operation	✓			
5. Clean outside from inside . . . tips vent too. Without removing any part of window	✓		✓	✓
6. Delayed Action Opening	✓			
7. Concealed Hardware	✓	✓	✓	
8. Interchangeable Inside Screens and Storm Sash	✓		✓	✓
9. Flip Clips for screen and storm sash removal	✓			
10. Weather protection when window is open (ventilation even while it is raining)	✓			✓
11. 100% Ventilation (full opening)	✓		✓	
12. Air Infiltration*	0.09	0.5	1.0**	1.0**
13. Draft Free Ventilation	✓			✓

*Lower Test For Weather per Hour

**Assembly to Window

LUDMAN Auto-Lok IS THE ONLY WINDOW THAT GIVES YOU ALL 10 OF THESE IMPORTANT FEATURES...



1. FRESH AIR WHILE IT'S RAINING...

No more turning to close windows... rain can't enter through Auto-Lok's scientifically designed floating vent.



2. WARMER IN WINTER...

Auto-Lok Windows are the **tightest closing windows ever made** by actual laboratory test. Heat stays in, cold stays out... cutting fuel costs!



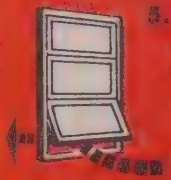
3. COOLER IN SUMMER...

Auto-Lok Windows open wider... almost 90°. The floating vents help to scoop in even the slightest breeze... always inward and upward thus eliminating drafts.



4. EASIEST TO CLEAN...

Nothing to fill out... no vents to remove... no gadgets to disengage. Simply open wide and clean all glass from the inside... top vent, too!



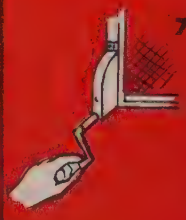
5. FRESH AIR NITE-VENT...

Bottom vent opens slightly for night ventilation, while upper vents remain securely locked... fresh air circulation during bad weather, too!



6. PRACTICAL BEAUTY...

Narrow horizontal lines and graceful tilt of vents in every open position add distinction to any home... lend themselves to a wider variety of architectural arrangements.



7. FINGER-TIP CONTROL...

for a lifetime. Perfectly balanced, friction-free mechanism operates window at the touch of a finger. No adjustments ever necessary... never sticks, never rattles!



8. INTERCHANGEABLE SCREENS AND STORM SASH

Can be handled all from the inside. Just flip the clips... no tools required. Reduce a day's work to an hour!



9. CONCEALED HARDWARE

No unsafe, unsightly mechanism exposed to collect dust. Compact rolo-type operator handle does not interfere with drapes, blinds, etc.



10. CENTER SAFETY-LOCK

A new improved locking feature that securely locks the bottom vent. Center position makes it handier, more accessible. Extra protection against intruders.

THE NEW LUDMAN Auto-Lok CONTROL-BAR

An example of how

LUDMAN SOLVES WINDOW PROBLEMS...

THE *Simplest* OPERATING WINDOW EVER MADE!

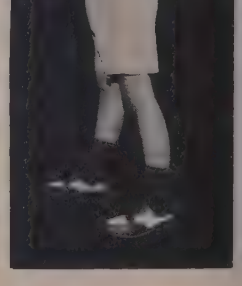
Here is a new AUTO-LOK Window especially adaptable for schools and institutions ... but, designed for any application where quick, simple, easy operation is desired. A handsome, smooth aluminum alloy bar takes the place of the conventional operator... **an effortless push-out or pull-in operates the window!**



This New AUTO-LOK Window Is Another Ludman FIRST!

Here is one more example of Ludman Window "Know How"... which can be applied to any window problem you might have. Ludman window research and engineering facilities are available to anyone with a difficult or unusual application of windows to solve. Call on Ludman for any help you desire.





MAIL THIS COUPON FOR FULL DETAILS

LUDMAN Corporation
Box 4541, Dept. AF11, Miami, Florida

Gentlemen: Please send me, without obligation, the booklet, "What Is Important In A Window"... and complete information regarding the Ludman Products checked here:

☐ Auto-Lok Aluminum Windows
☐ Auto-Lok Wood Windows
☐ WindoTite Jalousies
☐ Ludman Jalousie Doors
I am a... Architect ☐ Builder ☐ Dealer ☐
☐ Other_____

Name_____

Address_____

City_____ State_____

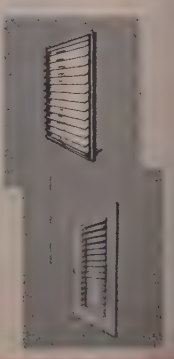
OTHER LUDMAN PRODUCTS:

LUDMAN WindoTite JALOUSIES

...will turn your old-fashioned porch into the **most talked about** room in your home!

LUDMAN JALOUSIE DOORS

...will bring brightness and light into dark foyers and hallways!



Roddiscraft THE DOOR THAT FITS WITH ALL FINISHES



RODDISCRAFT HOUSEMART HOLLOW CORE DOOR

RODDISCRAFT Housemart flush doors blend beautifully with any interior finish from ultra-modern exposed brick face to colonial paper.

Not only the smooth flush design, but the choice of faces make them adaptable to any interior. Available in Natural Birch, Red and White Birch, Maple, Red and White Oak, Mahogany, Walnut, Knotty Pine and other woods.

Roddiscraft Housemart Hollow Core doors are generously made — contain ample wood at side and top and bottom edges for trimming and the safe anchoring of hardware. Lock blocks on both sides provide a maximum number of hanging positions.

Look for the solid color dowel — your guarantee of quality.

Roddiscraft
RODDIS PLYWOOD CORPORATION
Marshfield, Wisconsin

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 39, Mass. • Charlotte 6, N. C. • Chicago 32, Ill. Cincinnati 4, Ohio • Cleveland 4, Ohio • Dallas 10, Texas Detroit 14, Mich. • Houston 10, Texas • Kansas City 3, Kan. Los Angeles 58, Calif. • Louisville 10, Ky. • Marshfield, Wis. Miami 38, Fla. • Milwaukee 8, Wis. • New Hyde Park, L. I., N. Y. • New York 55, N. Y. • Port Newark 5, N. J. • Philadelphia 34, Pa. • St. Louis 16, Mo. • San Antonio 6, Texas San Francisco 24, Calif. • San Leandro, Calif.



ACOUSTICAL MATERIALS AT WORK



CHURCH OF ST. THERESE, Alhambra, California

Architect: **J. Earl Trudeaux**

General Contractor: **Escherich Bros.**

Acoustical Contractor: **R. W. Downer Co.**

The Church of St. Therese is a fine example of the integration of acoustical materials in design. To preserve the open design of the ceiling, the architects used Armstrong's Cushiontone between the beams. The walls at front and rear were covered with Armstrong's Travertone—chosen for the beauty of its stone-like surface. Combined, the two materials provide ideal acoustics.

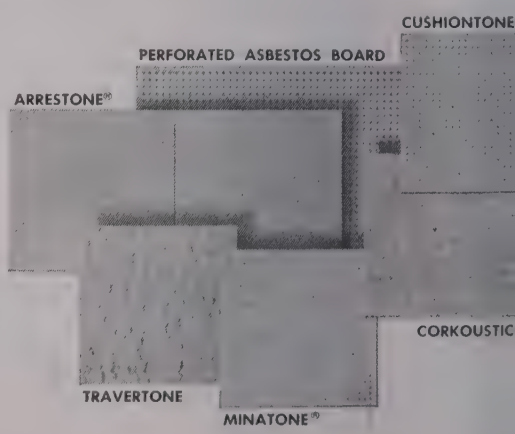
Armstrong's Cushiontone is a perforated wood fiber material, high in acoustical efficiency, yet low in cost. It has an attractive, washable finish that's high in light reflection and repaintable without noticeable loss of acoustical efficiency.

Armstrong's Travertone is a beautifully fissured mineral wool acoustical tile. It is completely incombustible. Installation of Travertone is fast and clean, whether in new construction or in remodeling work.

Armstrong's complete line of acoustical materials offers a wide range of special features. Call in your Armstrong Acoustical Contractor for full details. For the free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 5404 Stevens Street, Lancaster, Pennsylvania.



To blend more perfectly with the church's interior, the Travertone was repainted with a special background color and then flecked with gold.



ARMSTRONG'S ACOUSTICAL MATERIALS

Rent, credit controls face close squeeze in Congress; new system replaces CMP

Congress went to the mat this month with controls legislation—probably the law with the biggest impact on the construction industry that will emerge from this session.

The sharpest controversy—over the future of the rent control—was headed for a House-Senate fight that would go right down to the April 30 deadline, when rent controls expire. Almost everybody had a different shade of opinion about what ought to be done. Defense Mobilizer Arthur S. Flemming gave the Senate these proposals:

Extend rent ceilings until Sept. 30 for all areas now under control to give states ample time to take over if they choose. Extend controls until April 30, 1954 for critical areas, but narrow the definition of them to those caused by military bases, atomic energy developments, and "government installations such as a shipyard, air depot, ordnance depot or arsenal." Excluded would be cities with defense plants.

The Senate banking committee agreed (12-3) after tacking on an 8.3% rent increase (to 130% of the 1947 level) for both the 1,300,000 families under critical areas controls and for the 4,200,000 families in local communities that chose last fall to keep rent controls left from World War II.

The free-enterprise House. While the tidelands oil debate balked action on the Senate floor, Chairman Jesse Wolcott (R, Mich.) persuaded his House banking committee to approve a measure far more to the building industry's liking. It would:

Let controls die on schedule April 30 everywhere but in critical areas; narrow critical areas by military and atomic installations on July 1; exempt from control both new construction and conversions since Feb. 1, 1947 in critical areas.

Moreover, Wolcott's bill made no mention of other economic controls (see below) covered in the Senate measure. He told newsmen he would insist on a pure rent control bill when the Senate and House reach the apparently inevitable conference on their divergent measures. He would, he said, compromise for a two months' extension of controls in noncritical areas. Capitol observers thought it was a fair bet that was the law which would finally emerge.

Price, wage controls. On other economic controls, the Senate banking committee voted to give the administration even more power than it sought:

- The President would have authority to freeze wages, prices (and rents) for 90 days in case of emergency until June 30, 1955. All three would have to be frozen at their levels on any day within the 30 preceding the emergency order.
- The Federal Reserve Board would get power to reimpose consumer credit in an emergency, but power to reimpose Reg. X over mortgage credit would go to the President. That would open the way for split administration which the Fed opposes.
- Authority for priorities and allocations of critical materials would be continued until June 30, 1955, along with V-loans and the Small Defense Plants Administration.

Little CMP. Actually, the administration blueprint for materials controls after June 30 was pretty much *laissez faire*. The familiar Controlled Materials Plan will be supplanted by a new alphabetical gimmick: the Defense Materials System (DMS). Allotments of steel, copper and aluminum will be made only to defense contractors and subs, along with preference ratings for tools and equipment. Other users will be on their own. In construction, only contractors working directly on Defense Dept. or AEC projects and specially (and stingily) picked defense-supporting projects will be covered. They will apply for the usual quarterly allotments on form DMS 4-C, a modified version of the familiar CMP 4-C.

Materials prices rise; hint seen of boost for steel

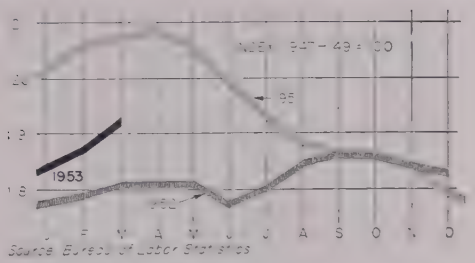
Materials prices and wage rates were climbing again. The BLS index calculated on mid-March data moved up to 119.2 from 118.7 in mid-February (see chart), its second sharpest month-to-month gain in over two years (the sharpest: a .6 jump to 118.6 last August, interrupting the year's general price decline).

BLS regional reports said prices in Nassau County, N.Y. (Long Island) showed "slight increases," in the Chicago area "remained stable." in Boston "continued to rise." Principal higher-priced items: lumber products, plumbing and heating materials (and more recently cement).

NEWS ON THE INSIDE:

- New 3¼% government bonds look like deliberate deflation and promise to slow the building boom slightly.
- Los Angeles' Mayor Fletcher Bowron trails in his bid for re-election after a campaign in which his support of public housing was the chief issue.

(pp. 136-137)



MATERIALS PRICES began to reflect effects of price decontrol, rose to an average index of 119.2 for March. This put them equal with the BLS' July 1951 average, although their range in the entire intervening 20 months never exceeded 1.4 points. The March rise stemmed from a fairly wide range of increases, but mostly lumber, cement, plumbing item advances.

Copper dives. After decontrol in February copper rose from 24½ to 32¢ per lb. By Apr. 1 it drifted to 30¢ again. On Apr. 10 ODM suspended stockpiling copper to try "to prevent added strain on the market," and further easing in the price was expected.

Basic steel prices were unchanged two months after decontrol. But a hint of possible increases could be seen as industry spokesmen complained of "financial malnutrition" and the need for "a basis where the investing public will be interested in steel stocks."

Less wage battling. Labor still exerted a steady pressure for higher wages, but with the cost-of-living index falling off a little it was more conciliatory on new contracts than in many years past.

Sharper contractor competition (see p. 46) was tending to wipe out cost increases caused by higher materials and wage expenses. Over-all building costs were still holding stable, with possibly just a slight trend to lower rather than higher costs.

Air Force overrides town's bid to halt tax-free plant

In January, the little village of Cuyahoga Heights (pop. 752), an industrial suburb of Cleveland, challenged the Eisenhower administration to do something about government plants which pay no taxes but burden communities with increased police, fire and utility services. It refused to grant a building permit to Aluminum Co. of America for a $40 million government-financed plant to house one of the Air Force's giant aluminum forging presses (AF, Feb. '53, News).

For three months, the village's stand stymied construction. This month, Ikemen

did something about it. The Air Force ordered Alcoa to begin building, permit or not. A general wrote Alcoa: "If any persons interfere you are immediately to notify the Air Force and the US Department of Justice which will [protect you]."

To some bystanders, the order seemed high-handed. Snapped the Wall St. *Journal:* "There is a little clause in the Fifth Amendment which says that no person shall be deprived of life, liberty or property without due process of law, and there is another which says 'nor shall private property be taken for public use without just compensation.' Those clauses would seem to fit the case of Cuyahoga Heights rather neatly."

In Congress, two bills to provide tax compensation were pending.

Commerce Dept. predicts federal economy drive will cut total US building 5% in '53

The Commerce Dept. experts who make the government's official forecasts of the nation's construction volume this month took a long look at the impact of the Eisenhower-Dodge economy order and came up with this prediction:

Federal building will drop so much this year that the nation's total dollar outlay for new construction will probably drop "about 5%" below last year's record $32.3 billion level. The biggest cuts in federal building will be made by the military—perhaps 25% (AF, March '53, News). And most of the trimming, both military and nonmilitary, will come out of projects still in the planning stage.

Less arms plants. The broad policies, affecting construction secondarily, were beginning to take firm shape. Among Congressional leaders, there was a growing feeling that it might be possible to balance the budget on a cash basis for fiscal 1953-54 and still cut taxes this year. That might mean slicing $8 billion off Truman's "tight" $78 billion budget. Some $2.2 billion might come out of nondefense activities, perhaps another $2.5 billion from foreign aid.

But the biggest news was that Defense Secretary Wilson had demanded that the armed forces cut their budget a whopping $4 billion. One way Wilson wanted to do it was by dumping the Truman administration's mobilization plan of "broadening the base" and replacing it with a much cheaper "stretch-in" plan which would concentrate military output in the plants of a few producers, mothball the others. If the plan were adopted, it would throttle down future construction of arms plants, although the defense boss was in favor of offering manufacturers incentives to build plants designed for speedy conversion to war production.

Screening delay. But it would take months even after President Eisenhower gives the word to translate a stretchout or trimming of manpower, ships and planes into a reduction of military plans for supporting facilities. So Pentagon construction reviewers, still struggling to finish screening all military construction (AF, March '53, News), settled temporarily for delaying approval of projects that might be shelved by a top-level stretchout decision.

Up to the start of April, two months after Wilson's edict to hold up construction awards, only a driblet of high priority projects had a green light.

The economy order had brought a sharp drop in federal construction contract awards. In the first two weeks of March, they fell 51% behind the same period in 1952. But for the year up to that point, they were only 5% below the 1952 level, thanks to an unusually high January volume. Awards rose this month, but remained well below last year's levels.

Public buildings hit. Among civilian agencies, some of the budget cutbacks were going a lot deeper. One of the stiffest slashes was given the Public Buildings Service. Budgetmen yanked back all that was left of a $13 million appropriation dating from 1949 for advance planning and site acquisition. The result, said Public Buildings Commissioner W. E. Reynolds, would be a 62% reduction in his 450-man planning staff in Washington.

Other bits of economy: a $40 million cut in rural electrification loans, a reduction from $9 to $6 million in funds for the Southwestern Power Administration, a $39 million cut in construction funds of the Interior Department (60% of the department's proposed economies), cuts in federal aid for airports.

Public housing starts. For public housing, new HHFAdministrator Albert L. Cole proposed a ceiling of 35,000 starts for the next fiscal year—the same limit imposed by Congress for the year ending June 30. Chances were Congress would cut the figure still lower, although propublic housers were girding for their annual fight for as much as they could get.

Federal economy was also beginning to encounter vocal opposition. Somewhat to White House embarrassment, a Washington conference of local officials meeting at the President's call went down the line for big government. If anything, they wanted more federal participation in civil defense, slum clearance, public housing, airport development, highway and hospital construction. Mayor William B. Hartsfield of Atlanta, president of the American Municipal Assn. cried that state legislatures are usually dominated by rural members, so cities would suffer if states took over federal programs. The National Association of Real Estate Boards, in its newsletter, promptly accused the mayors of defending "tin cup rights."



Macy's will build main unit in East Bay shopping center

Announcements of large regional shopping centers have been legion since Jan. 1, were providing one of the biggest boosts to the commercial construction boom (stores, restaurants and garages were up 49% from last year during the first quarter). This month Macy's San Francisco disclosed it would build a three-level $6 million store with 200,000 sq. ft. of floor space in the Bay Fair shopping center (model above) to be developed on 48 acres of the old Oakland Speedway Stadium grounds in the East Bay area between San Leandro and Hayward. Besides Macy's (separate building in background), the $25 million center designed by Architect Victor Gruen will have a second department store, a bank, parking space for 4,000 cars.

Gimbels? It announced plans for a 220,000 sq. ft. store in Southgate, another about the same size in Westgate, two Milwaukee projects. Also entering Westgate: Marshall Field.

They wanted a change . . .



ROUSE



HOLLYDAY



MRS. RAMSAY



HEALY

Leaders of Baltimore slum plan quit in row over new setup to make plan really work

There was plenty of cheerful talk last month about rehabilitating the nation's urban slums. But in actions that counted, the building industry's newest campaign suffered two setbacks that showed rehabilitation needs far broader community support and understanding if it is to succeed.

▸ In Baltimore, cradle of the slum renovation plan that has spread across the nation, a quarter of the 16 members of the housing bureau's advisory council resigned in protest against politicians' refusal to give the fight against blight administrative powers equal to the task.

▸ In Miami, the nation's first city slum clearance department was scuttled by the city commission after its political enemies found a legal mix-up in the ordinance that created it. Miami realtors and builders let the promising department die without protest. It had lasted only six months.

Only a pinprick. For all its pioneering and national attention, the Baltimore Plan in ten years has made only small inroads on Baltimore's 2,100 blocks of slums. By the widest stretch of statistics, the plan has touched only 300 blocks. And in many of these, there was neglect of the re-education of slum dwellers that so few people even in the building industry realize is an indispensable part of fighting urban decay. As a result, some of the 300 blocks are again slipping back into slums.

One of the chief reasons why progress is so slow, Baltimore's slum fighters think, is the clumsy tools they have to do the job. Like Topsy, Baltimore's slum-attacking housing bureau just grew. It grew where it was born, inside the city health department. As a result, the housing bureau found itself stifled in layers of bureaucratic red tape. Its inspectors not only lacked complete power to act against slum housing on their own authority, but could only wheedle aid from police, firemen, the bureau of buildings, zoning enforcement office, the bureau of highways, bureau of sanitation, park, education and public welfare departments.

'Ineffective, slow.' A year ago, Chairman James W. Rouse of the housing advisory council warned Mayor Thomas D'Alesandro the Baltimore Plan "needs prompt and vigorous assistance if it is to survive." He explained: "When a problem arises which blocks progress in the improvement of a slum neighborhood it is studied by the housing bureau and its advisory council, neither of which has authority to take action or to negotiate with such other departments as may be involved. The housing bureau must proceed through the commissioner of health, who is free to accept or disregard its advice, whether or not its recommendations relate to a health matter. As a result, the machinery created [by the 1951 ordinance establishing the housing bureau] not only moves slowly; it also moves ineffectively. It takes an inordinate length of time and an extravagant quantity of letters, memoranda and conferences to produce simple, worth-while results which should be accomplished quickly, easily and directly."

Mortgage Banker Rouse offered this solution: set up a nonpaid commission on blight (akin to a redevelopment commission) which would take over the health department's functions and powers in slum-doctoring, with direct access to the mayor and exclusive power to enforce the maze of separate and overlapping codes in specific areas picked by the city council for rehabilitation.

Advice rejected. Last month, on the advice of his city solicitor, Mayor D'Alesandro turned Rouse's sense-making proposal down. The solicitor had found it unworkable and impractical. To slum fighters, the mayor's action looked arbitrary and thoughtless. More probably, the mayor had merely taken the usual political course of siding with the stronger side. Solicitor Tom Biddison got his advice from Dr. Huntington Williams, long-time Baltimore health commissioner who is unwilling to let the housing bureau get out of his hands. Williams, in turn, was backed by an advisory board of his own which included such powerful figures as Dr. Abel Wolman, professor of sanitary engineering at Johns Hopkins University and widely known industrial consultant; and Dr. Ernest Stebbins of Johns Hopkins medical school. There was also the possibility that the seldom-seen hand of slum-owning landlords was at work. Baltimore has never heard a full explanation of why Governor McKeldin did not reappoint Harry Kruger as judge of its housing court when his term expired in 1951.

Protest resignations. On Mar. 24, the disheartened advisory council met, and most of its members agreed to resign, carry their fight for a separate blight commission to the Maryland legislature, which must pass an enabling act before the city can create it.

The housing bureau's director, G. Yates

THE NEW FHA COMMISSIONER

Only two weeks after Guy T. O. Hollyday (pictured above) resigned as a member of Baltimore's housing advisory council, President Eisenhower nominated him as FHA commissioner to succeed careerist Walter L. Greene, who will remain as deputy.

Hollyday, 60, is president of Baltimore's Title Guaranty Co. and an officer or director of half a dozen other commercial and civic enterprises. He is a former (1946-47) president of the Mortgage Bankers' Assn. As expected, the Senate confirmed him unanimously. Hollyday's was the second major Republican appointment in the building industry. The first: Albert L. Cole as HHFAdministrator.

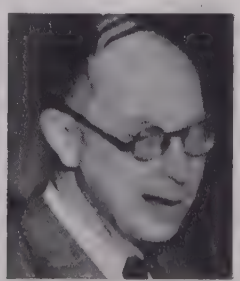
. . . They opposed it



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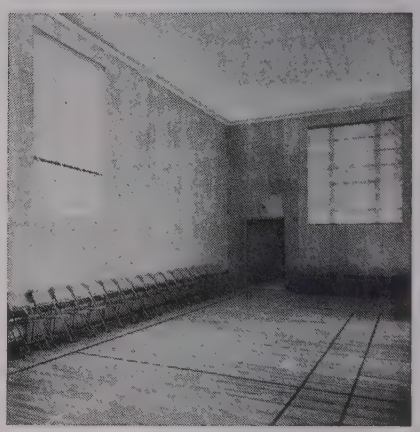
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Architect: Burnett V. Vickers

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Architects: Moore & Hutchins

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Architects: Warren S. Holmes and Emilio Di Rienzo

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Architect: Robert A. Green

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Cook, perhaps sensing the rejection to come, had already quit to head a new NAHB housing rehabilitaion department (H&H, Mar '53, News). Resigning with Rouse were Council Members Guy T. O. Hollyday, former president of the Mortgage Bankers Assn. who this month took office as President Eisenhower's FHA commissioner; Mrs. John B. Ramsay, a past president of the Baltimore League of Women Voters; and Thomas J. Healy, local AFL teamster boss. Others who planned to quit wavered later as the row grew. Some of them explained they needed too many favors from the city hall to risk a rhubarb with the mayor.

Eyes on wrong ball. Rouse wrote the mayor: "It is time we recognize that the Baltimore Plan cannot grow and develop into the kind of a program the city desperately needs under its present structure in city government." In rejecting the plan for a blight commission, he said, Solicitor Biddison "has his eye focused on the wrong problem. He is preoccupied with how it may disturb the traditional processes of city government to set up the machinery to fight blight effectively." Rouse charged that Baltimore's machinery was so "ineffective, and inefficient" that even in the 27-block pilot area where the Baltimore Plan had been brought to its fullest flower, some violations remained uncorrected after two years. Reason: the housing bureau cannot get the five or more inspectors from separate departments to follow up violations, report on corrections.

Retorted Mayor D'Alesandro: "We are faced with a choice between the dictation of Mr. Rouse and the advice of the city solicitor and the commissioner of health." He took another customary step, ordered an inquiry into why violations went uncorrected.

In the Maryland legislature, the blight commission bill flopped for lack of political backing. The lawmakers passed it, but cut the heart out of it by exempting Baltimore city and seven counties. The legislature will not meet again for two years. So Rouse, forming a citizens' committee, laid plans to put the issue directly before Baltimore voters. Meanwhile, Baltimore's pace-setting slum plan seemed headed for an uncertain future.

Torpedo in Miami. Miami's slum clearance department was so new it had never had a chance to function. Still worse, it commanded none of the broad community support without which slum renovation cannot succeed. So it was no great trick for headmen of the city's building and zoning inspection divisions, who had fought creation of a separate slum department, to find a legal shenanigan to wreck it.

Involved were slum areas' nonconforming wooden shacks which were built before the city's current zoning laws were adopted in 1934. Florida's Supreme Court ruled two years ago that Miami cannot force owners of pre-1934 shacks to tear them down. But Miami has an ordinance forbidding structural repairs to nonconforming buildings. The ordinance creating the slum department did not repeal it. So Zoning Inspection Supervisor Robert Korner warned the city manager: "You have created a new department with authority to order property owners to violate the city's general zoning ordinance by directing them to make structural repairs to nonconforming buildings." Backed up by an opinion from City Attorney John E. Cicero, the building department refused to issue any more permits for major repairs.

Stymied, the city commission decided to reinstate the old law it repealed to set up the slum department. This returned slum rehabilitation to a voluntary basis by letting slum owners disregard zoning laws in repairing dangerous structures.

Miami's decision virtually wrecked chances of any real slum rehabilitation. Cried Mrs. Elizabeth Virrick, of the Citizens Slum Clearance Committee: "This means that repairs to shacks in our slums will perpetuate them for another 30 years."

Urban Land Institute urges redevelopment be divorced from housing, much expanded

Prompted by the new administration's studies of housing policies, the Urban Land Institute last month suggested three plans for revamping HHFA's division of slum clearance and urban redevelopment, urged a major expansion rather than any curtailment of federal grants to cities under Title I of the Housing Act of 1949.

Surprisingly, ULI's position was at complete variance with NAREB, its parent organization. Last November, NAREB President Joseph W. Lund urged outright repeal of Title I. He explained: "In any federal grant-in-aid program 50¢ of each $1 is thrown away in bureaucracy; it gives the US control over city governments."

Cities aid nation. The realtors comprising ULI took a different view: "It is through the commercial and industrial activity of the city that the nation derives most of its strength. . . . [Unfortunately Title I's] tie to housing has continued to the detriment of urban redevelopment." Therefore, Title I "should be broadened" to provide more, easier federal assistance for projects involving commercial and industrial districts. Congress should end the rule that areas must be predominantly residential either before or after redevelopment to qualify for federal funds.

Because redevelopment involves far more than housing, federal help never should have been incorporated in a housing act, said ULI. "The agency to whom they [cities] look for assistance, geared as it is to field of housing, is ill-equipped by either legislation, or philosophy, or experience to evaluate the cities' proposals in any but the housing fields."

ULI ventured these possibilities:

▶ 1. A federal Department of Urban Affairs consolidating agencies concerned with the economy of cities. This would be a counterpart of the Department of Agriculture. "It is unlikely, however, that the nation is as yet ready or willing to move in this direction," philosophized ULI.

▶ 2. Complete reorganization of HHFA into an Urban Development Agency, in which redevelopment would be accorded "its proper place with respect to its constituent elements including commercial, industrial, residential development and public uses."

▶ 3. Shift HHFA redevelopment to the Department of Commerce, which has historically been identified with urban planning and zoning, and already has the principal agencies concerned with other urban problems: the Census Bureau, Bureau of Public Roads, Civil Aeronautics Administration.

Keynote project. For an indication of how well—or badly—the present redevelopment setup was working, many an architect and planner this month focused his attention on Washington. A lot of them thought it was a fair sample of nearly everything done wrong.

Approved Apr. 5 by HHFA was an $8.8 million temporary loan and a $6.3 million capital grant (to be made later) for the capital's first Title I redevelopment. It involved a 76-acre portion known as Area B of the 427-acre Southwest Area, a warren of congested slums only a few blocks from the halls of Congress. The trouble was that local redevelopers earmarked area B for low-rent row homes and garden apartments (at least a third within $17 a room). How it could be made profitable to private developers was hard to see.

Low-income housing for Area B also was taken as killing all possibility of developing the larger 427-acre tract along lines of the promising Justement-Smith plan (FORUM, Aug. '52) which would have sharply upgraded the entire district, included extensive middle-income to luxury apartment housing, an office building, possibly two major shopping centers.

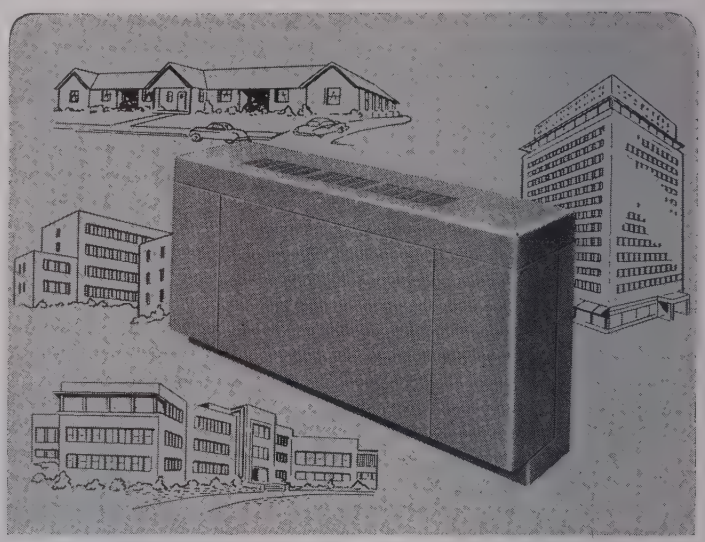
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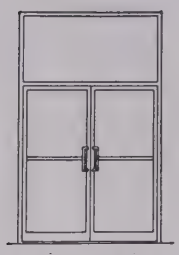
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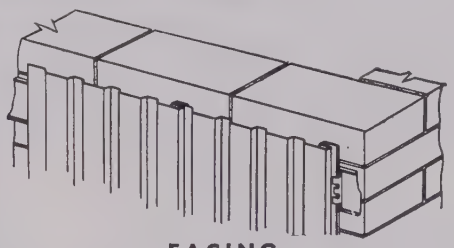
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There is a Kawneer Installing Dealer in your vicinity. He is factory-trained to serve you, the architect. Call him for qualified assistance. Look for him under "Store Fronts" in the classified pages of your telephone directory. Or write Kawneer, Niles, Michigan.



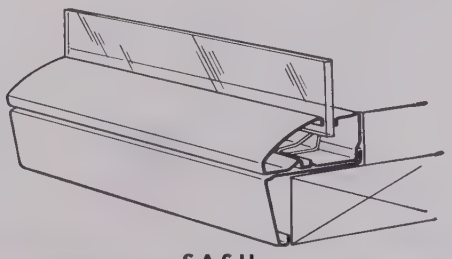
ENTRANCES

Kawneer entrances, like this Double Door Narrow Stile, offer strength and durability blended with grace and beauty. They provide entrances that are in keeping with the best concepts of contemporary architecture.



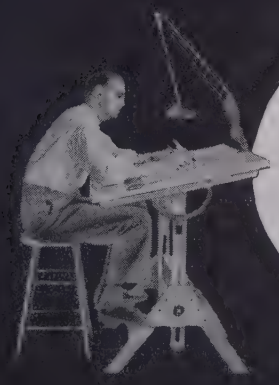
FACING

Kawneer Zourite facing is now available in a variety of colorful, glazed, porcelain enamel finishes, and lustrous Alumilite. In four widths, with nine trim members, Zourite meets all facing requirements for Steel, Wood Partition, or, as illustrated, Brick construction.

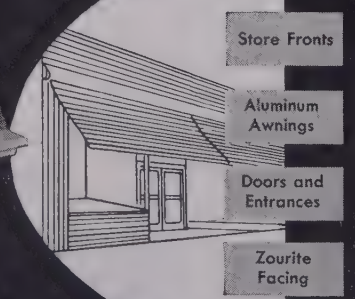


SASH

The gracefully curved face of Kawneer 10-124 Deep Reveal Sash offers unusual design possibilities. Kawneer stocks twenty styles of Sash to meet your requirements in building fronts.



Busy architects let Kawneer help them design their best.



Kawneer

NILES, MICHIGAN

Lexington, Ky. · Berkeley, Calif.



TOP OFFICERS AND SPEAKERS at the opening session (l to r) were retiring President Horner, Commerce Undersecretary W. Walter Williams, former ASCE President Carlton S. Proctor and new AGC President C. P. Street. Williams, a former Seattle mortgage banker, derided "whispered anxieties" about a business decline if defense expenditures are curbed.

NEW VICE PRESIDENT John MacLeod (below) is public relations committee chairman. His report urged continued institutional advertising by the national association, recommended chapters and branches consider budgeting for it.



MacLeod also sits on AGC executive, labor, finance and progress committees, and is a member of the joint AGC-Construction Industry Manufacturers Assn. committees. Since 1929 he has headed the Macco Construction Co. in Los Angeles County, building mostly for the military and oil industry.

AGC convention ponders paradox: bid cutting while work volume rises, may hit new peaks

In Detroit a year ago, the Associated General Contractors' convention moaned over materials controls that had 49% of its members "not busy." Its 1953 convention in Miami March 23-26 fretted instead over a rash of price cutting that has broken out despite the construction boom following the end of controls.

As its Florida convention began, AGC announced the results of a poll of its 80 national directors and 122 chapters, whose members do more than 80% of the nation's contract construction. Highlights:

- The construction industry in a period of abundant, increasing work is characterized by intense competition, sharp bidding, lowering prices.
- Contractors almost everywhere reported competition is "vicious," "rough," "terrible," "keen," discouraging," "tight."
- For the "apparent paradox," AGC officials offered this explanation: more contractors are returning to the market who had refrained from bidding while controls caused uncertainties. Another factor: contractors are apparently bidding to "load up" with as many projects as they can.

Stalwarts unconcerned. If the news depressed the 1,567 delegates they did not show it. The consensus was: "Let it come. Now is as good a time as any to weed out the ribbon clerks." Declared Miami Contractor Edward M. Fleming: "The situation was long overdue. Seems everybody with money enough to hire an estimator and rent some equipment has jumped into the construction business. The tougher the competition, the quicker the sheep and goats will be separated."

The survey also brought forecasts of increased activity in almost every type of construction in nearly all parts of the nation. Retiring President Arthur S. Horner predicted '53 would set a $35 billion record for new construction, $10 billion for maintenance and repairs.

Materials prices were relatively stable in all sections, according to the survey, but pressure for higher wages was reported in 83% of the replies. The convention commended President Eisenhower for suspending wage and price controls, declared construction wages "have increased commensurate with increases in the cost of living and productivity," but recommended that members cooperate with the government "to stabilize the national economy by avoiding unwarranted increases in wages or fringe benefits which are detrimental to the national welfare."

Bid shopping fight. Of gravest convention concern was the perennial threat that Congress will pass an anti-bid shopping law, requiring that subcontractors' names and quotations be included in bids for federal construction contracts. Although AGC helped defeat such legislation last year, legislative committee Chairman Frank W. Robertson sounded a new warning: "The [subcontractors] who are proposing this . . . appear to be leaving no stone unturned, even in the spending of money and bringing political pressure to bear." (Government bureaus again were expected to oppose bid-shopping legislation at joint judiciary committee hearings this month. The bills might

LABOR LEADERS LISTENED but declined to speak after President Richard Gray of AFL's Building and Construction Trades Dept. failed to keep a speaking date. Three solemn international presidents (l to r) sat in on first two day's sessions, then left: W. J. McSorley, of the lathers, William E. Maloney, operating engineers, and Henry J. Bates, bricklayers. At extreme right: Chairman Arthur H. Wells of AGC's labor committee. *John T. Bills*





TWO NEW SPOKESMEN for government and industry were Commerce Undersecretary Williams (l) and new AGC President Street. Secretary and General Manager of McDevitt & Street, Charlotte, N. C., the 52-year-old AGC leader formerly headed its building contractors' division. His firm, for which he has worked since he graduated from Vanderbilt University in 1922, builds schools, hospitals, factories, public buildings throughout the Southeast.

John T. Bills



SECRETARIES & MANAGERS COUNCIL reviewed administrative problems of local chapters. Earle W. Devalon of Denver (l) handed gavel for 1953 to successor Chairman Robert Patten of Charlotte, N. C. while new Secretary Curtis Bell of Corpus Christi and Vice Chairman A. H. Harding of Portland, Ore. (r) smiled approval. Last year six new chapters and branches were formed at Abilene, Tex.; Evansville, Ind.; Gulfport and Meridian, Miss.; Laramie, Wyo.; Philadelphia. Local organizations rose to 122, individual AGC membership from about 6,000 to 6,250.

be pigeonholed but the outcome was still a tossup.)

AGC's building division noted that a drive to require separate contracts for subcontractor portions of state construction projects seemed to be taking shape in some legislatures. It cautioned: "A strategic pattern may be developing to advocate and press for separate contracts and then offer a compromise to settle for legislation that would require naming of subcontractors."

Military viewpoints. Maj. Gen. Samuel D. Sturgis Jr., chief of Army engineers, stirred mixed emotions. On one hand he took issue with AGC, AIA and ASCE protests that Engineer Corps' bid procedures allowing alternate design proposals are not truly competitive bidding. Sturgis' stand: for common structures like barracks and warehouses the Army will use standard plans whenever possible. But it does not want to rule out alternate designs if their special techniques or materials will produce *equivalent* construction at lower costs.

Striking a more responsive chord Gen. Sturgis took a broad swipe at critics of contractors and the Engineer Corps' role in Moroccan air-base construction snarls:

"We were assigned schedules comparable to wartime and given peacetime rules. . . . There is no priority on time. It comes at premium price. Work can be done at high speed or at an economical pace. But it can't be both. So those who accordion time generally should be prepared for someone to let out a hell of a wail before the movement is complete."

Military backlogs. Before the February freeze on military construction (see p. 137), the Engineer Corps had $2.6 billion of unobligated construction funds: $1.8 billion for the Air Force, $828 million for the Army. Except for $344 million for airfield pavements, said Gen. Sturgis, most was earmarked for barracks, warehouses, administrative and industrial facilities. If "thawed" intact 85% of the Army funds would go for permanent construction, 15% for temporary works. All Air Force construction would be permanent.

Pinch-hitting for R. Adm. J. F. Jelley, chief of the Navy Bureau of Yards & Docks who was detained in Washington to restudy his budget, Deputy Chief Capt. A. D. Hunter reported the Navy had more than $400 million of construction to be put un-

PERSONNEL is the Army Engineer Corps' biggest problem in foreign work, declared Maj. Gen. Samuel D. Sturgis Jr. (below). "There are too few skilled men . . . it is difficult to recruit [them]."





MADRID swarms with US contractors hunting deals in event of a NATO-Franco accord, cracked Capt. A. D. Hunter (top), deputy chief of the navy's Yards & Docks bureau.



LEGISLATIVE committee Chairman Frank W. Robertson (r) said Congress already has 240 bills affecting contractors.

AWARE, paying $29.20, $10.60 and $5.40, won the Associated General Contractors Purse, the name given to the seventh race at Gulfstream on March 24. In the winner's circle (r) President Horner gave flowers to Jockey Fernandez and owners' representative Mrs. Maria Munro.





Photographs by THIGPEN



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mechanical engineer

JAMES B. DONAGHEY
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GULF COAST MARINE SUPPLY CO.
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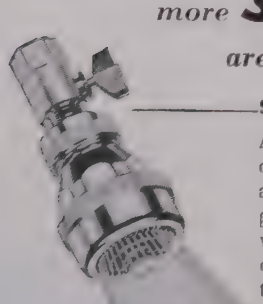
HOSPITAL SITE FORMERLY A GOLF CLUB

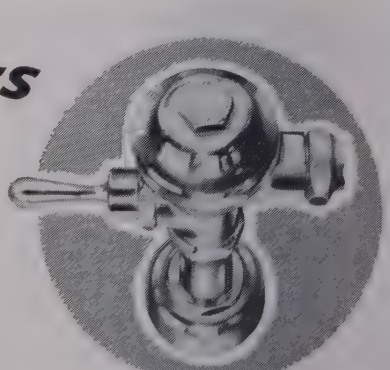


Patients at MOBILE INFIRMARY, MOBILE, ALABAMA, are cheered by looking out upon a wooded and grassy scene that once was a beautiful golf club. And visitors are exceptionally well served by several acres of parking space bordering winding driveways. Inside this T-shaped, ultramodern hospital are excellent accommodations for nearly 300 persons, surrounded by facilities and services beyond the usual. Later construction will provide a nurses' building for residence, training and recreation. The plan contemplates an equally high level in designing and equipping the second unit. Coupled with the many innovations in this notable hospital are a great many superior products, such as SLOAN *Flush* VALVES, famous through more than 40 years for efficiency, endurance and economy. Here is more proof of preference that explains why . . .

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der way on March 1. Except for the Dodge freeze about $300 million of this would have been under contract by Sept. 1.

Excusable mistakes. Pending approval by the AIA committee on contract documents, the convention was informed, AGC's special committee on the *Suggested Guide to Bidding Procedure* has recommended adding the following modification:

"If after bids are opened, the low bidder claims that he has made an appreciable error in the preparation of his bid and can support such claim with the owner and the architect, he should be permitted to withdraw his bid.

"In such instances the award of the contract should be made to the next lowest bidder."

In his annual report Managing Director H. E. Foreman confessed AGC was so divided over amendments to the Taft-Hartley Act that no association stand seemed warranted. Said he: "Because of the multiplicity of proposed amendments resulting in divergent opinions, the executive committee has recommended that at least until there is a clear-cut expression of AGC opinion, the association furnish complete information to chapters and members in order that they may support or object to such proposals as they see fit, but that it should not seek to testify as representing a majority opinion at this time."



FOREMAN

Result: the only labor resolution adopted by the convention was a declaration against "any federal law which would impair or supersede labor legislation by the several states."

The convention by other resolutions:

- Opposed legislation for federal supervision of industrial safety regulations except on federally financed projects.
- Cast its lot against stripping the Army Engineers of civil works by recommending that existing agencies familiar with construction be exempt from Hoover Commission consolidation and reorganization during the defense or mobilization period.

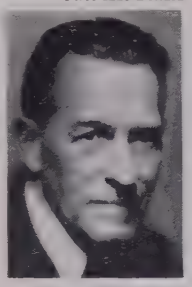
Max C. Harrison of Pittsburgh told a highway division meeting about the concern of the AGC-National Assn. of State Aviation Officials joint committee for the future of the Civil Aeronautics Administration:

"The CAA is being emasculated. Other government agencies and cities, towns, counties, the Air Force are taking over airport construction. We even hear the CAA is to be liquidated and some other bureau will take over its work. We have [recommended appointing] a committee to consult with the Department of Commerce and find out what the score is."

PEOPLE: William Adams Delano awarded AIA gold medal; Mortensen quits as head of Producers' Council

AIA announced its 1953 top honors to be presented at its Seattle convention June 15-19. The gold medal, its highest award, went to **William Adams Delano**, FAIA, member of Delano & Aldrich since its formation in 1903. His principal works: the US Embassy in Paris, the Japanese Embassy in Washington, New York's India House, many homes.

Pirie Mac Donald



DELANO

Other awards: the fine arts medal, to Sculptor **Donald Hord** of San Diego; the craftsmanship medal to **Emil Frei** of St. Louis; the Edward C. Kemper award for outstanding contributions to the profession, to **Geritt J. de Gelleke**, FAIA, of Milwaukee, 1941-50 finance committee chairman; honorary memberships will be awarded to two men not eligible for regular AIA membership: **Gurdon Montague Butler**, dean emeritus, Arizona University engineering college; **Frank Creedon**, Defense Department construction advisor.

Charles M. Mortensen, 42, managing director of the Producers' Council since 1947, resigned to join the US Chamber of Commerce staff in Washington. He will work with Henry P. Fowler, manager of the chamber's trade association department until Fowler retires in August, then succeed him. Omaha-born Mortensen began his career as field engineer for the Iowa State Planning Board, later was public relations man for Structural Clay Products Institute and California regional engineer for the American Iron and Steel Institute.

Thirty architects were chosen as AIA Fellows for distinguished performance in design, education, literature, public service or service to AIA. The honorees and their fields of achievement:

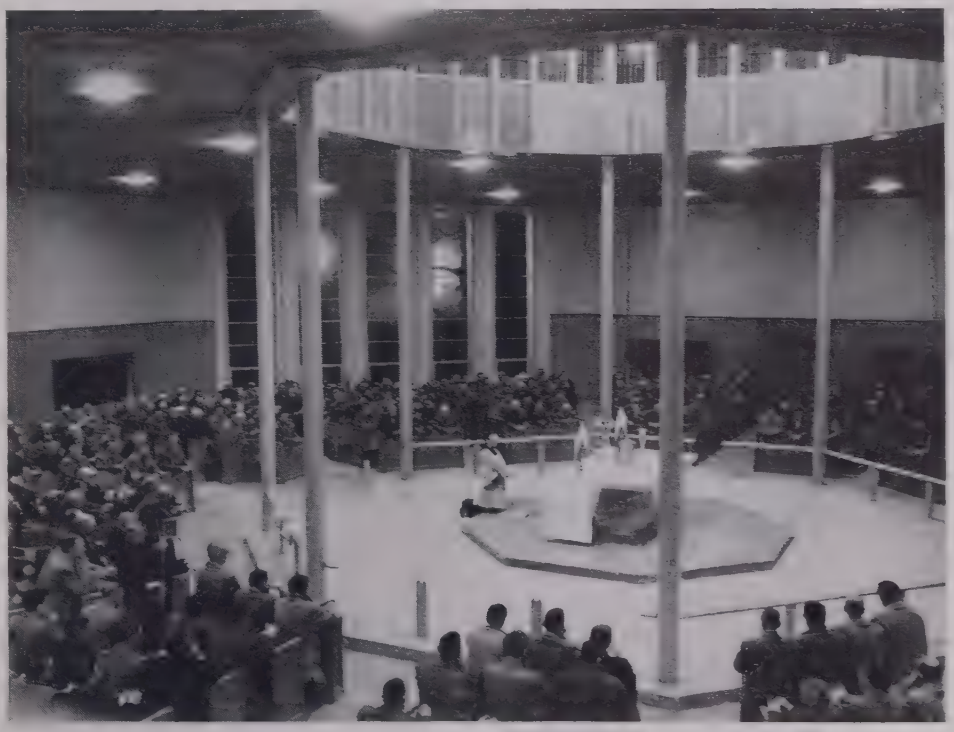
Thomas Henry Atherton, Wilkes-Barre; Leon Chatelain Jr., Washington; Eric Trevor Huddleston, Durham, N. H.; Clarence William Palmer, Detroit; Walter F. Wilson, Lincoln, Neb., public service.

Turpin Chambers Bannister, Urbana, Ill., education and literature.

Richard Marsh Bennett, Chicago; Albert Mayer, New York; Lawrence B. Perkins, Chicago; Otto John Teegen, New York; design and education.

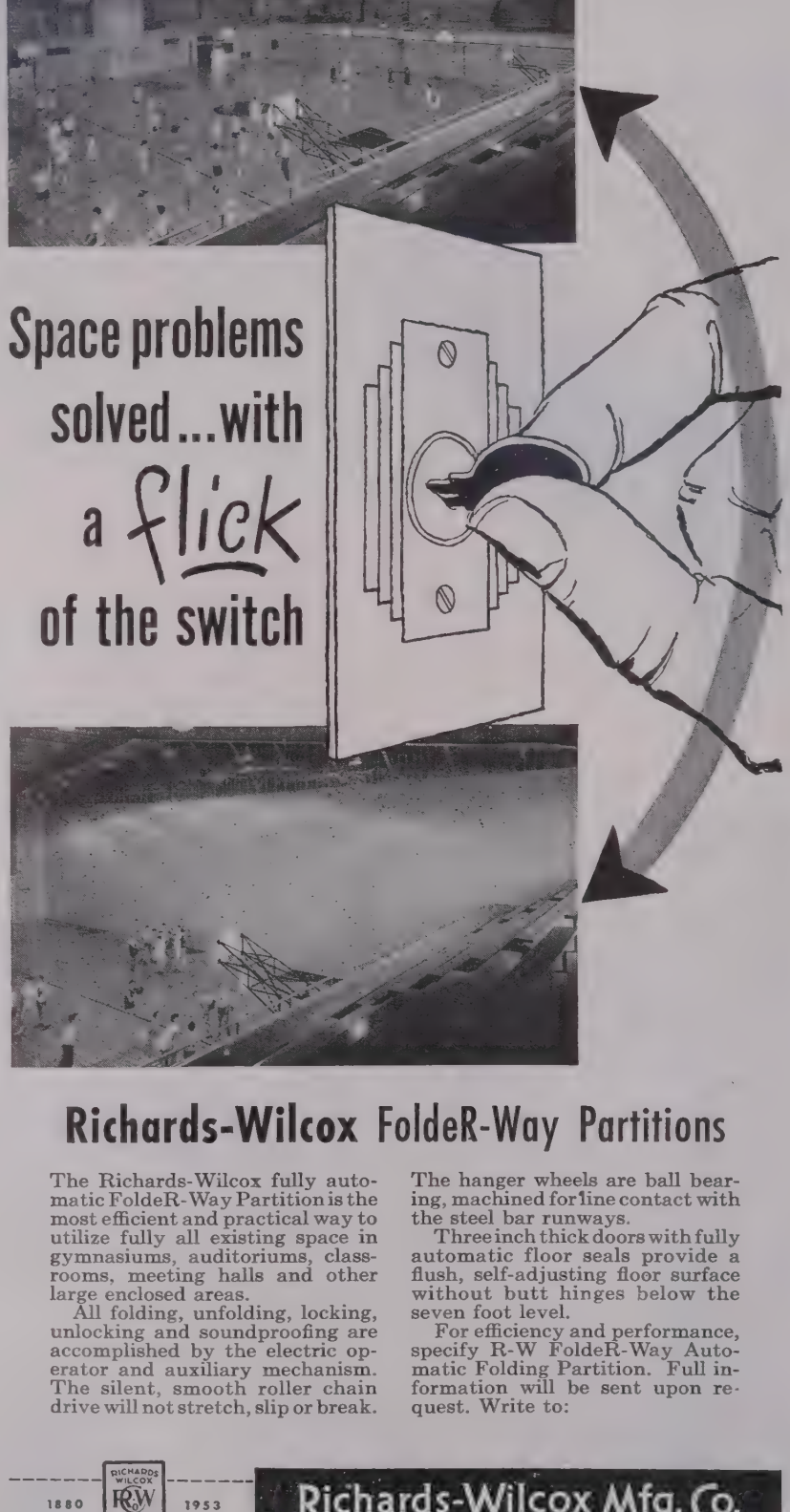
Theodore Irving Coe, Washington; Adrian Nelson Langius, Lansing; Wilbur Henry Tusler, Minneapolis; Kenneth Curtis Welch, Grand Rapids; Marcellus Eugene Wright, Richmond, Va., service to the Institute and public service.

Wide World



Church in the round saves over conventional design

The Blessed Sacrament Church at Holyoke, Mass., which opened Easter Sunday, revives what is thought to be man's earliest formation of worship: the circle. Its octagonal shape (topped by a round roof) brings all pews close to the center altar. Architect Chester F. Wright of Waltham gave the exterior a freestanding tower which serves as both bell tower and chimney. Says Father Daniel E. Hennessey, the pastor (who had disliked other modern churches): "While this deviates from the tradition, it is both beautiful and very practical, costs far less to build than a traditional style."



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NEWS

Robert Charles Dean, Boston; John R Fugard, Chicago; design and public service.

William Charles Furer, Honolulu; E. Ja Gambaro, New York; service to the Institut

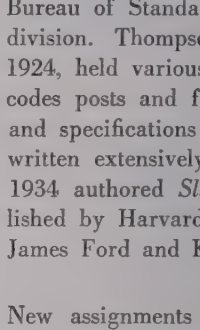
Henry L. Gogerty, Los Angeles; science construction.

Milton Latour Grigg, Charlottesville, V Robert Allan Jacobs, New York; Morris Ketch Jr., New York; Curtis Meredith Lovelace, Bet hem, Pa.; Geoffrey Platt, New York; Bert Anton Weber, Chicago; Kenneth Smith W Long Beach, Calif.; design.

Arthur P. Herrman, Medina, Wash.; Loui Kahn, Philadelphia; education.

Charles Wellington Walker, Bridgeport, Co design and service to the Institute.

"For rare and outstanding contributions the development of model building co . . . reconciling conflicting points of vi



THOMPSON

. . . bringing to the tion higher standa of housing safety a uncounted savings the elimination of necessary restriction So read the citat with the Departm of Commerce g medal awarded month to **George Thompson,** 61, assistant chief of Bureau of Standards building technol division. Thompson joined Standards 1924, held various housing, building a codes posts and from 1945-47 was co and specifications division chief. He written extensively on code problems, 1934 authored *Slums and Housing,* p lished by Harvard University Press, w James Ford and Katherine Morrow.

New assignments in Washington as Eisenhower administration was round out its third month in office: Attor **Edward F. Howrey,** of Sanders, Grave Whitlock & Howrey, was appointed ch man of the antitrust-enforcing Fede Trade Commission; St. Louis Banker **K ton R. Cravens,** who complained two ye years ago that "the country is literally ing subsidized into submission," was c firmed as Administrator for RFC, wh Congress was marking for liquidation mid-'54 or sooner; Acting Director **Art S. Flemming** was nominated as Director Defense Mobilization. He will head a r ganized ODM to put preparedness o permanent basis.

Three gold medals of the 56th annual hibition of the Architectural League New York were awarded to **Carl Koch,** Cambridge, Mass., for his Fitchburg brary design; **George Harding,** of Wyn wood, Pa. for consistently superior desi ing; and to Engineer **Fred N. Sever** Architect **William Henley Deitrick**

late **Matthew Nowicki** for their gh, N. C. livestock pavilion.

a dinner this month installing **Daniel artzman** as league president, the ael Friedsam Medal in Industrial Art 1952-53 was presented to **Arthur ry Houghton, Jr.**, president of Steu-Glass Inc.

IED: Edward P. Park, California ling and Construction Trades Council president and Sacramento operating neers' business agent, as California Labor Commissioner; Vice President General Manager **George F. Ferris,** as dent of Raymond Concrete Pile Co. eding **William C. McMenimen,** who continue as chairman of the executive agement committee of Construction agement & Engineering Associates, a ination of three contracting firms ling Air Force construction in France.

TED: Charles E. Fry, of Los Angeles, alifornia Council of Architects presi- succeeding **William Koblik,** of Sacra- o; **Harry H. Salk,** vice president of American National Bank & Trust Co., esident of the Chicago Building Con- ; **Robert W. Purcell,** vice president counsel of the Alleghany Corp. and apeake & Ohio, as president of Inves- Diversified Services, Inc., large mort- lenders, succeeding **Earl E. Crabb,** continues as board chairman; **Tal- ge C. Hughes,** executive secretary of Detroit AIA chapter and the Michigan ty of Architects, as chairman of igan's Board of Registration for Ar- cts, Professional Engineers and Land eyors, succeeding **Wells I. Bennett,** , dean of Michigan University's col- of architecture and design; **Joseph ield,** window and door department ger of Ceco Steel Products Corp. as Window Institute board chairman.

Critic and Author **Sigfried Giedion,** ce, *Time and Architecture* and *Mecha- ion Takes Command*) told a New York chapter luncheon that the younger ation is architecture's biggest prob- Said Giedion: "We are dealing not the new style but with a new attitude d life. Three generations are re- d to build this into the architectural ion of the 20th Century. The pio- began let's say around 1910. . . . ht's Larkin Building. . . . or Gropius' s factory, as you please. A second ation was required to put the work e pioneers into general operation. A generation will be required to get the m." Giedion said the youngest gen- n is trying to close the gap between ct and emotion that opened at the

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James McBride reports great success with Higgins Block in the Culmore Apartments near Washington, operated by Jno. N. Campbell, Inc. Installation costs were low, reaction from renters enthusiastic.



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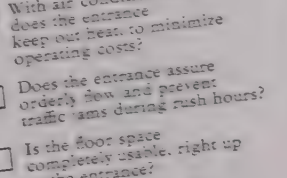
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MR. ARCHITECT – Take this ENTRANCE examination
about the doors you specify for your clients

YES	NO	
☐	☐	Is the entrance draft-free, avoiding discomfort for customers and employees?
☐	☐	Does the entrance prevent wasteful heat loss, on cold blustery days?
☐	☐	With air conditioning, does the entrance keep out heat, to minimize operating costs?
☐	☐	Does the entrance assure orderly flow and prevent traffic jams during rush hours?
☐	☐	Is the floor space completely usable, right up to the entrance?
☐	☐	Does the entrance keep out dust and dirt, to reduce frequency of redecorating and cleaning, and merchandise spoilage in sales areas?

If your answer is NO to any of these questions, you owe it to yourself to investigate the great possibilities of a revolving door entrance.

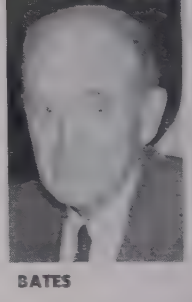
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start of this century, and wants a ri more emotional architecture. Examp their greater concern with civic probl their desire to design auditoria, churc civic halls, and more emotionally sati ing structures with three-dimensional v ing "such as FORUM published recen (March, '53).

DIED: **W. Scott Blanchard,** 51, b chairman of the Blanchard Lumber Co New York and Boston, March 16 in W Palm Beach; **Charles F. Ackerman,** secretary of the New Jersey State Bo of Architects and former architect v the New York City and Newark, N boards of education, March 17 in Hills N. J.; **Henry D. Bates,** 86, founder in

Fay Photo Service



BATES

of *The Brickbuil* later renamed AR TECTURAL FORUM, which he was publi for about 10 y March 21 in Conc Mass.; **Dr. John Parker,** 73, former p ident of the Amer Institute of Elect Engineers who dire design and construction of Brookl 914,000-kilowatt Hudson Ave. steam-ele generating station, largest in the w March 23 in Brooklyn; **Bertram H. L rence,** 70, US Steel vice president in ch of engineering, formerly associated wit American Bridge and American Steel Wire subsidiaries, March 25 in Clevel **James S. Whitney,** 31, associate pa and son of Charles S. Whitney, of Amn & Whitney, consulting engineers, Marc at Nassau, the Bahamas; **Frederic A. Iano,** 89, city planner and uncle of the President Franklin D. Roosevelt, one- (1927-42) head of the old National C tol Park and Planning Commission chairman of the National Resources P ning Commission (1934-43), March in Washington; **Emory B. Jackson,** coordinating architect for Pittsburgh versity's building program, formerly sulting architect for the University Chicago and other colleges, March Pittsburgh; **J. Gordon Turnbull,** 62, sign and construction consulting engi for the Ford River Rouge plant, workers' town at the Richland, W atomic plant, a $130 million expan program of Reynolds Metals Co., and automobile plants for Pontiac, Buick Packard, April 1 at Los Angeles; **G Dunn,** 82, president of J. G. White poration, former American Institute Electrical Engineers president, April 1 New York City.

(NEWS *continued on*

AUTOTRONIC®

Without Attendant

ELEVATORING

SPEEDS NORMAL DOOR CLOSING







PREVENTS DELAYS AT LANDINGS

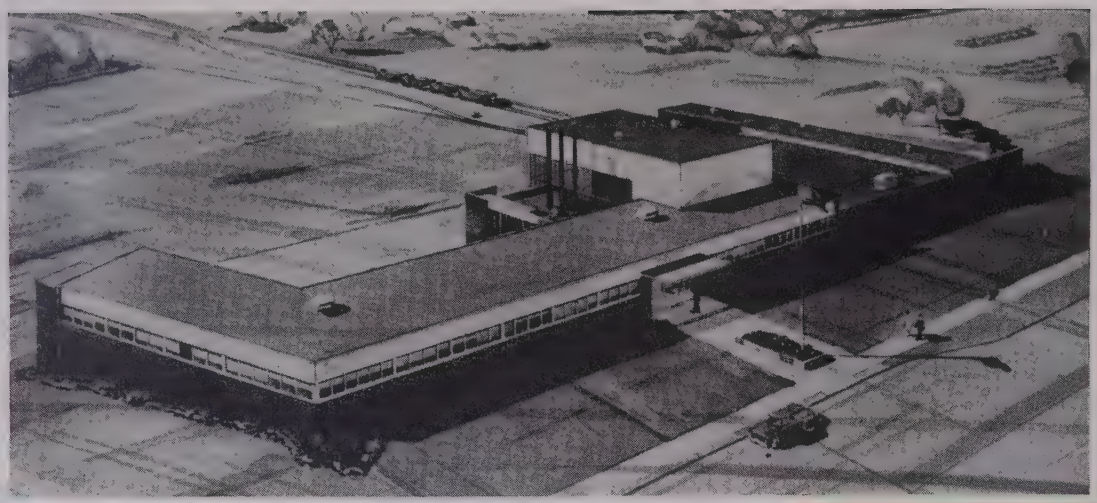
The passenger is seldom aware of door movement

Autotronic—WITHOUT ATTENDANT—Elevatoring closes elevator doors automatically with "electronic politeness". A zone of detection extends along, across and a short distance in front of the leading edges of both car and hoistway doors. The presence of passengers within the zone is detected electronically. This three-dimensional zone extends only a few inches in advance of the doors. Doors are stopped and reversed only when there is the possibility of interfering with passengers as they enter or leave the car. Door closing is speeded. The closing action is so smooth, silent, and automatic that passengers are seldom aware of door movement.

If a talkative passenger delays door closing too long, the doors gently, but firmly, nudge him out of the doorway.

Autotronic—WITHOUT ATTENDANT—Elevatoring saves up to $7,000 a car, each year. It is suitable for office buildings, department stores, hotels, and hospitals. Why not visit a new or modernized installation? Ask any of our 266 offices for details. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

BETTER ELEVATORING IS THE BUSINESS OF OTIS



Why
as the

TECHNICAL CENTER, National Malleable and Steel Castings Company, Cleveland, Ohio.
Architects and Engineers: Dalton-Dalton Associates, Cleveland.
General Contractor: The Leonard H. Krill Company, Inc., Cleveland.
Structural Steel: Builders Structural Steel Corporation, Cleveland.
Panel Fabrication and Erection: The H. H. Robertson Company, Pittsburgh.

THE INSTALLATION of exterior Stainless Steel wall panels
Structural Steel framework. The panels are mounted
x 3″ unequal-leg angle base girts on concrete. The elevate
are 8″ channels, located horizontally on 6′ centers.

tructural Steel was chosen backbone" of this new echnical center

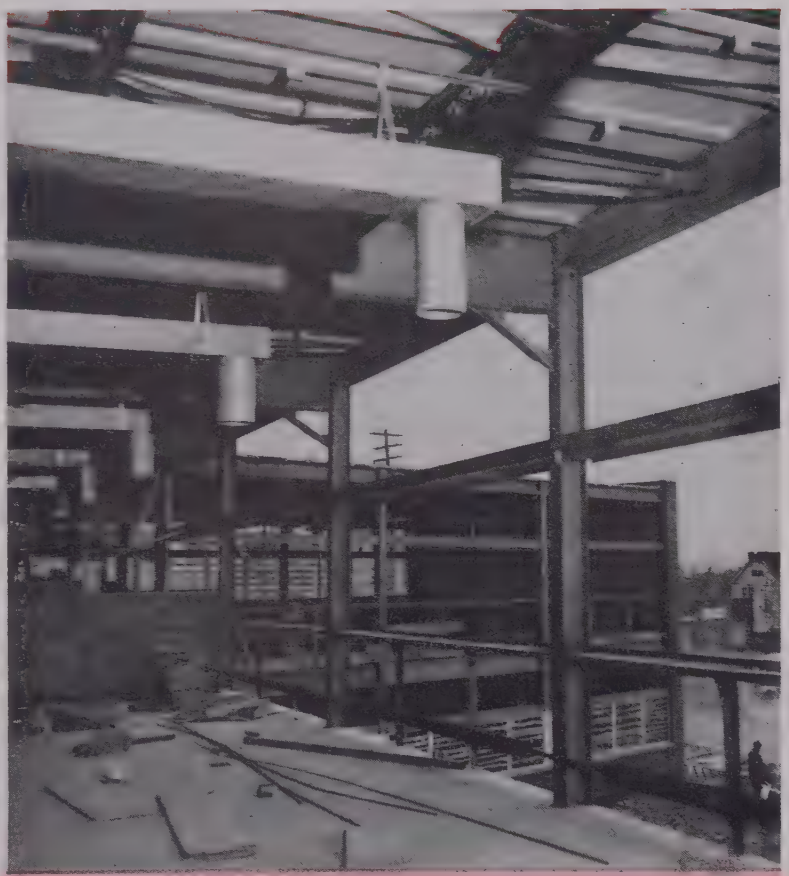
OUND engineering and economic reasons dictated the use of structural steel in the framing of the new office d laboratory building for the National Malleable and eel Castings Company, at Cleveland, Ohio.

Structural steel is the most economical load-carrying aterial. It effectively resists tension, compression, ear, and torsion, and will withstand more abuse than her structural materials. Enclosed in buildings, steel ill last indefinitely, for it requires no maintenance. eel beams are fabricated indoors where weather can-ot affect the quality of workmanship. And most im-ortant, steel can be erected in any weather where men n work. It is versatile in its various methods of erec-on—riveting, bolting, or welding. And complete visual spection is possible, thus eliminating the human ele-ent in field work.

Here in the ultra-modern National Technical Cen-r, the steel "backbone" supports 9000 square feet of sulated Stainless Steel wall panels, plus other exterior all materials of concrete, face brick, concrete block, eat-absorbing corrugated glass block, and metal sash. nterior partitions consist of steel, concrete block, and aster.

For further information on construction with steel, rite to the United States Steel Corporation, 525 Wil-am Penn Place, Room 2812-M, Pittsburgh 30, Pa.

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK



THE STEEL "BACKBONE" supports steel wall panels, concrete, face brick, concrete block, corrugated glass, glass block, and plaster more effectively than any other structural material.

See next page for further details of construction ▶

U·S·S STRUCTURAL STEEL

USS TRADE MARK

3-868

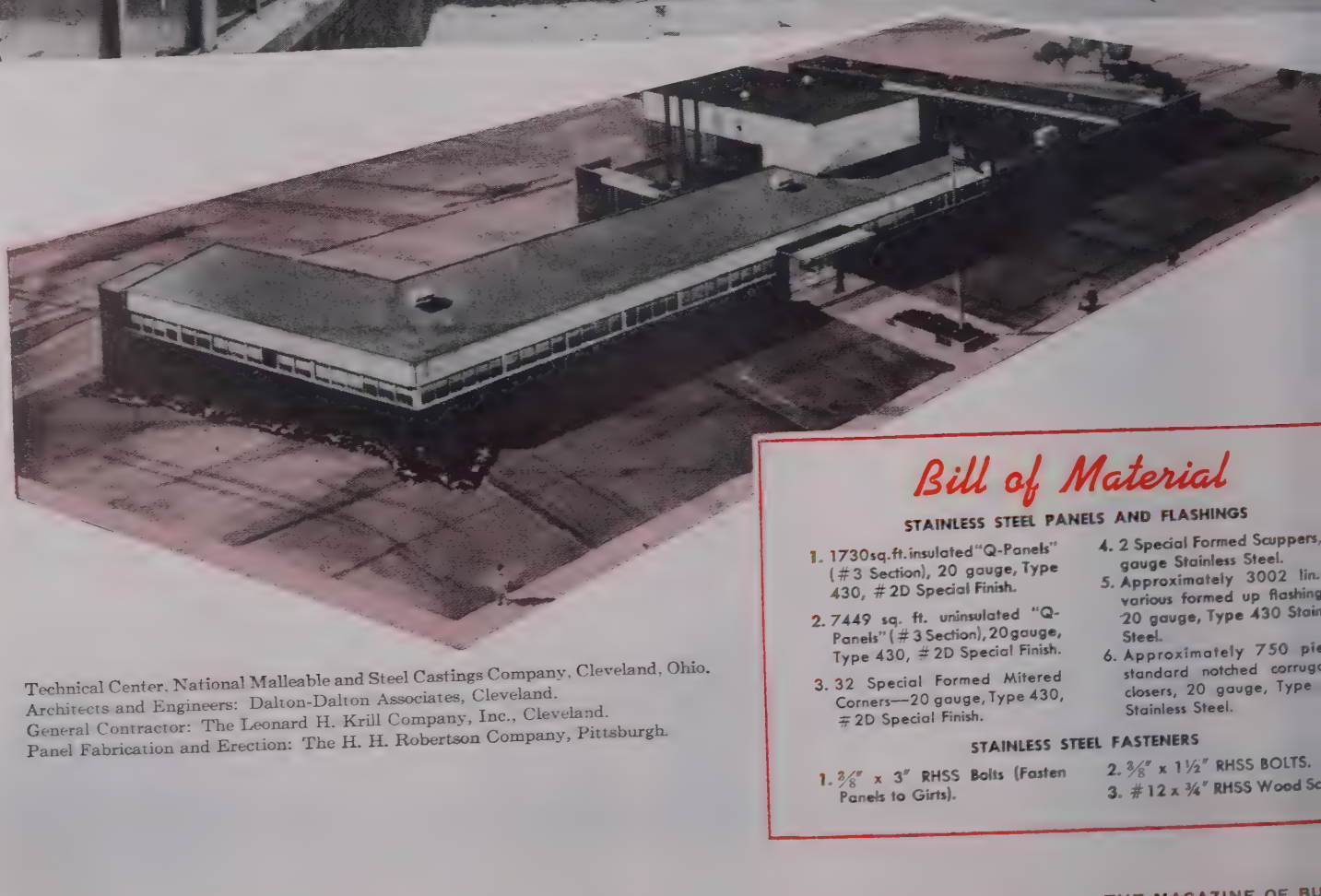
UNITED STATES STEEL

Insulated panels o

–used effectively witl

INSULATED PANELS of U·S·S 17 (Type 430) Stainless Steel and face brick make an eye-appealing combination on this elevation of the National Malleable and Steel Castings Company Technical Center. Glass block and corrugated glass are also used on the building.





Technical Center, National Malleable and Steel Castings Company, Cleveland, Ohio.
Architects and Engineers: Dalton-Dalton Associates, Cleveland.
General Contractor: The Leonard H. Krill Company, Inc., Cleveland.
Panel Fabrication and Erection: The H. H. Robertson Company, Pittsburgh.

Bill of Material

STAINLESS STEEL PANELS AND FLASHINGS

1. 1730 sq. ft. insulated "Q-Panels" (#3 Section), 20 gauge, Type 430, #2D Special Finish.
2. 7449 sq. ft. uninsulated "Q-Panels" (#3 Section), 20 gauge, Type 430, #2D Special Finish.
3. 32 Special Formed Mitered Corners—20 gauge, Type 430, #2D Special Finish.
4. 2 Special Formed Scuppers, gauge Stainless Steel.
5. Approximately 3002 lin. various formed up flashing 20 gauge, Type 430 Stain Steel.
6. Approximately 750 pie standard notched corrug closers, 20 gauge, Type Stainless Steel.

STAINLESS STEEL FASTENERS

1. 3/8" x 3" RHSS Bolts (Fasten Panels to Girts).
2. 3/8" x 1½" RHSS BOLTS.
3. #12 x ¾" RHSS Wood Sc

·S·S 17 (Type 430) Stainless Steel

ther materials—highlight this new technical center

Now being completed for National Malleable and Steel Castings Company, Cleveland, Ohio, this combination office and laboratory building demonstrates how effectively insulated panels of U·S·S 17 (Type 430) Stainless Steel can be combined with other wall materials.

In many previous applications, insulated Stainless Steel panels covered the entire exterior wall surface of the buildings, but here the architects have used this modern material in conjunction with face brick, glass block and heat-absorbing corrugated glass.

The new National Technical Center—with 16,400 square feet of office area and 14,012 square feet of laboratory area—is of concrete and steel frame construction. Stainless Steel panels cover approximately 9,000 square feet of surface.

Since the structure is completely air-conditioned, the low heat transmission coefficient ("U" factor) of these insulated panels is extremely important. And insulated panels of Stainless Steel have a host of other advantages to recommend them—striking beauty, superior corrosion resistance, freedom from costly maintenance, quick erection without regard to weather conditions, and an initial cost well in line with comparable materials.

For full information on this modern material of construction, send for our new book containing the latest data on construction with panels of U·S·S 17 Stainless Steel. Use the coupon below.



EVEN SEVERE WINTER WEATHER didn't halt erection of Stainless Steel panels on this laboratory and office building. Fast erection without regard to weather conditions is only one of the advantages of this type of construction.

U·S·S STAINLESS STEEL

USS

SHEETS · STRIP · PLATES · BARS · BILLETS
PIPE · TUBES · WIRE · SPECIAL SECTIONS

United States Steel Corporation
525 William Penn Place, Room 2801-X
Pittsburgh 30, Pa.

☐ Please send me your new booklet on U·S·S 17 Stainless Steel for industrial buildings.

☐ Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

Name Title

Address

City State

United States Steel produces only the Stainless Steel sheet and strip from which panels of this type are made. The panels themselves are fabricated by a number of our customers.

UNITED STATES STEEL CORPORATION, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

3-801A

UNITED STATES STEEL

Why Corrosion Costs You More Than Wrought Iron...

When you see a pipe repair job in progress, the economy of using durable material becomes obvious. Original installations are quickly made by pipe fitters. But repairs call for hours of work by as many as five crafts: pipe fitter, mason, carpenter, plasterer, painter. Thousands of users in every industry are finding the profitable answer in Byers Wrought Iron pipe. They know that "cost per year of service" is the only true measure of economy. Service records have proved that Byers Wrought Iron pipe is still good after serving three or four times longer in areas where vulnerable pipe has failed.

Write for details

A. M. Byers Company, Pittsburgh, Pa.

BYERS
WROUGHT IRON
PIPE

AP Wirephoto



TEST HOUSE No. 1, 3,500′ from last month's test atom blast at Yucca Flat, was splintered into this pile of rubble, but . . .

Underground shelter intact only 1,250′ from atom blast

For architects, probably the most cheering aspect of the March 17 atomic bomb tests in Nevada was the clear indication they provided that the new administration intends to put more emphasis on civil defense.

The day after the test nuclear device shattered two test houses at Yucca Flat, President Eisenhower ordered a reappraisal of the nation's civilian defense structure. Construction of protective shelters, it appeared, would remain far down the priority list but at least public interest in the subject was stirred. That was a first step.

The vulnerable house. Detailed technical analyses of the blast were kept under security wraps, but from Architect Bernis E. Brazier of Salt Lake City, AIA's official observer, and other witnesses, there emerged this story of what a bomb only ¾ as powerful as that used at Nagasaki did to wood frame homes considered typical of US dwellings:

▸ An underground shelter only 1,250′ from "ground zero" was undamaged, and dummies in it were undisturbed. This was the kind of shelter that could be built in a yard with an entrance from the basement and an escape exit to the open. It had cinder block walls, a concrete slab roof of unspecified thickness, 3′ of earth on top.

▸ Of the two $18,000 six-room colonial test houses, dwelling No. 1, at 3,500′ from ground zero, was blown off its foundations, crushed into charred, radioactive kindlings, as expected. In the basement, however, a $40 wooden sloping shelter strong enough to carry the debris from the structure's collapse was found intact (see cuts). As with the underground refuge 1,350′ from the blast, officials stressed that the shelter had provided structural protection, but not necessarily protection from radioactivity.

▸ House No. 2, at 7,500′ from ground zero

(continued on p. 62)

PLUGMOLD

2000 with SNAPICOIL

. . . is the EASIEST WAY to give your buildings MULTIPLE CONVENIENCE OUTLETS!


FACTORIES


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SCHOOLS


HOMES

Easier, Faster, Cheaper to Install in any building — new or old!

Plenty of electrical outlets is a feature that ranks right at the top of desirable points in any building — more electrical devices come into use every day and the need for outlets is greater!

PLUGMOLD 2000 provides a *double* outlet every 30 inches, in a continuous run—closer spacings are available wherever needed. Plugmold is readily installed in any building — factories, offices, stores, schools, hospitals, residences — it is surface mounted, which means no tearing out of floors or walls in existing buildings. Plugmold 2000 is also available in 3-foot & 6-foot factory-wired sections.

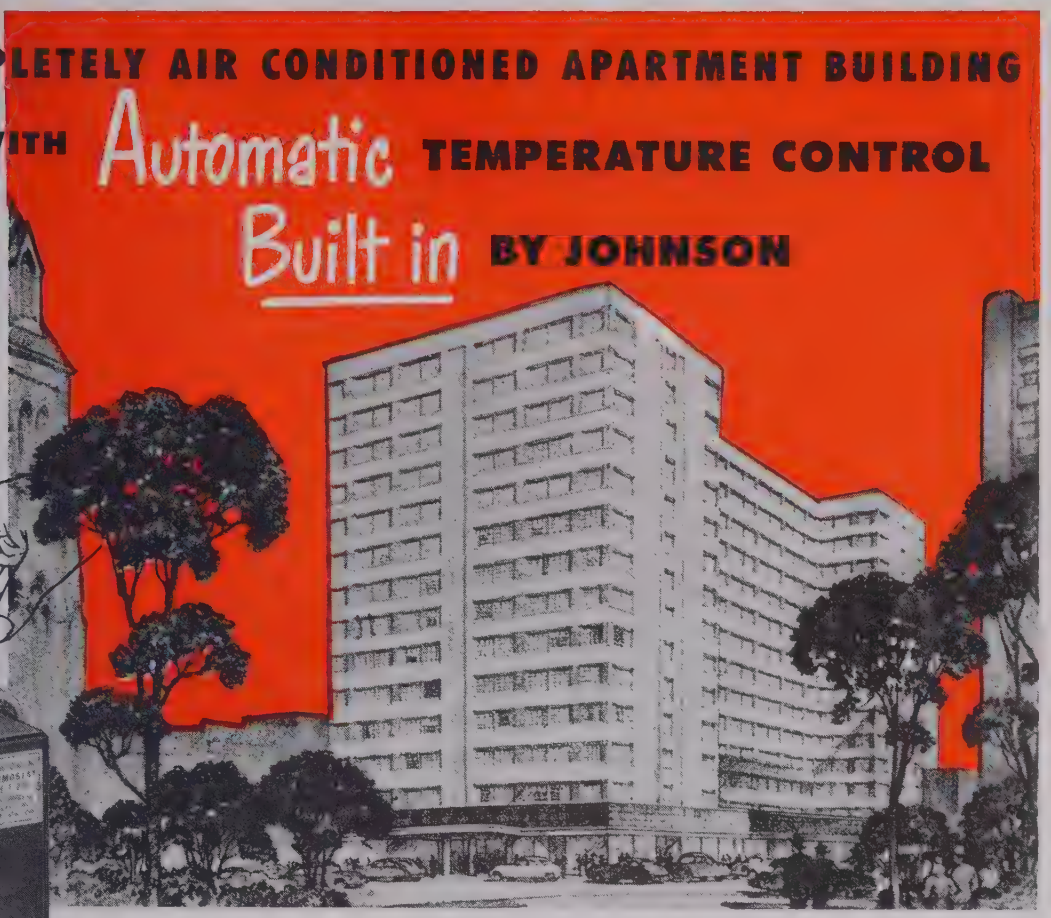
Plugmold makes any building a better building . . . get the full Plugmold story and the new free Plugmold 2000 book . . . write today!

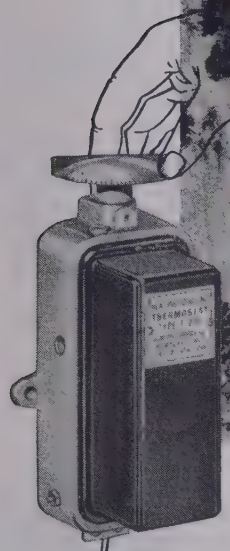
WIREMOLD

Makers of
PLUGMOLD – multi-outlet systems
WIREMOLD – electrical raceways
PANCAKE – overfloor raceways

THE WIREMOLD CO.
Hartford 10, Connecticut

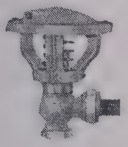
A COMPLETELY AIR CONDITIONED APARTMENT BUILDING WITH Automatic TEMPERATURE CONTROL Built in BY JOHNSON





Johnson T-271 Heating-Cooling Thermostat Mounted in Air Conditioning Units

Essex House, Indianapolis, Indiana.
Russ & Harrison, architects, Indianapolis; Ammerman, Davis & Stout, Inc., mechanical engineers, Indianapolis; Freyn Brothers, Inc., heating and air conditioning contractors, Indianapolis.



Johnson V-145 Hot and Cold Water Valve in Units



In this modern 14-story building in downtown Indianapolis, with its attractive features for home living, 416 Johnson-controlled, year-around air conditioning units provide "tenant selected" *room-by-room,* all-weather comfort in each apartment. A Johnson T-271 Heating-Cooling Thermostat is located in each unit, with its temperature bulb mounted close behind the recirculating grille to respond quickly to the average temperature of the air entering the unit. Thus, a Johnson V-145 valve on the hot and cold water supply to each unit is operated to determine automatically the heating or cooling effect to be applied.

In addition to the *individual room* control, there is comprehensive Johnson Master Control, behind the scenes, to regulate the temperatures and humidities for the two large primary air systems which supply the individual room units.

Six Johnson-controlled, year-around air conditioning systems serve the first floor stores and shops to provide the ultimate in customer comfort. A *must* in modern merchandising!

Let a Johnson engineer from a nearby branch office answer your temperature control problems, large or small. A talk with him involves no obligation. Ask him to call at any time. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885

Rolling Metal Doors

Provide Removable Dividing Wall in School Gymnasium!

The six aluminum rolling doors illustrated here, which form a dividing wall in a school gymnasium, are electrically controlled by push-buttons on a single panel. When the doors are fully opened, the mullions between doors on the main floor are moved out of the way by means of an overhead track and nested at either side, leaving the entire gymnasium floor clear.



Rolling Metal Doors with movable mullions prove to be ideal for a removable dividing wall in the gymnasium of a modern high school. In this particular installation, four power operated rolling doors are employed in the main floor area . . . two more power operated rolling doors are employed to divide the balcony on either side of the gymnasium floor, thus dividing the gymnasium into two entirely separate parts—which is desirable on many occasions in present-day usage. All visible parts of the six rolling doors, were manufactured in aluminum. Similar installations can be made in stainless steel, or in enamel coated galvanized steel which may be painted after erection to harmonize with a general decorative scheme. For high quality Rolling Metal Doors, and Underwriters' Labeled Rolling Steel Fire Doors and window Shutters, see Mahon's Insert in Sweet's Files, or write for Catalog G-53. Inquiries relative to special purpose doors, and installations such as the one illustrated here, should be addressed to the home office in Detroit for prompt attention.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Interior view of Gymnasium in the new Birmingham High School, Birmingham, Michigan. Swanson Associates, Bloomfield Hills, Michigan, Architects. Cunningham-Limp Company, Detroit, Michigan, General Contractors.

MAHON

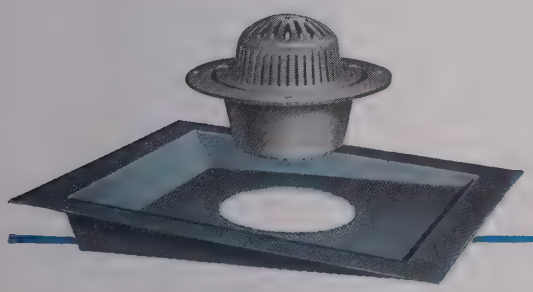
STEEL DECK . . .





BUILT-UP SADDLES ELIMINATED

Built-up saddles are eliminated in Steel Deck Roofs. Purlins can be set to create valleys at sump locations in the drainage area. Steel Deck can be warped to conform. No additional deck plates are required—no cutting, fitting or bending necessary.



SUMP RECESSES and SUMPS

Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4", 5", and 6" conductors.

Still the Most Economical, Permanent, Firesafe Roof Available Today!

Steel Deck roofs a greater percentage of new construction year after year . . . and there's a reason for this growing preference. It lies in the following definite advantages not common to other types of roof construction: Steel Deck can be installed in any kind of weather—no waiting for materials to dry . . . it can be insulated to the exact degree to meet "U" Factor requirements in any given locality without regard to structural properties . . . and, most important, Steel Deck's light weight permits substantial savings in the supporting structure—total dead load, including insulation and waterproofing material, is less than any other type of permanent roof construction. Mahon Steel Deck is available in Galvanized Steel, Galvanized Enamel Coated Steel, or Enamel Coated Black Steel. Stiffening ribs are vertical—no angular or horizontal surfaces where troublesome dust may accumulate. In the enamel coating process, the metal is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. These Mahon features warrant your consideration when selecting Steel Deck for any project. See Sweet's Files for complete information, construction details and specifications, or write for Catalogs B-53-A and B.

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Manufacturers of Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms; Insulated Metal Walls of Aluminum, Stainless or Galvanized Steel; Insulated Metal Wall Panels; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

MAHON

Why the contractor likes to install "Buffalo" PC Cabinets

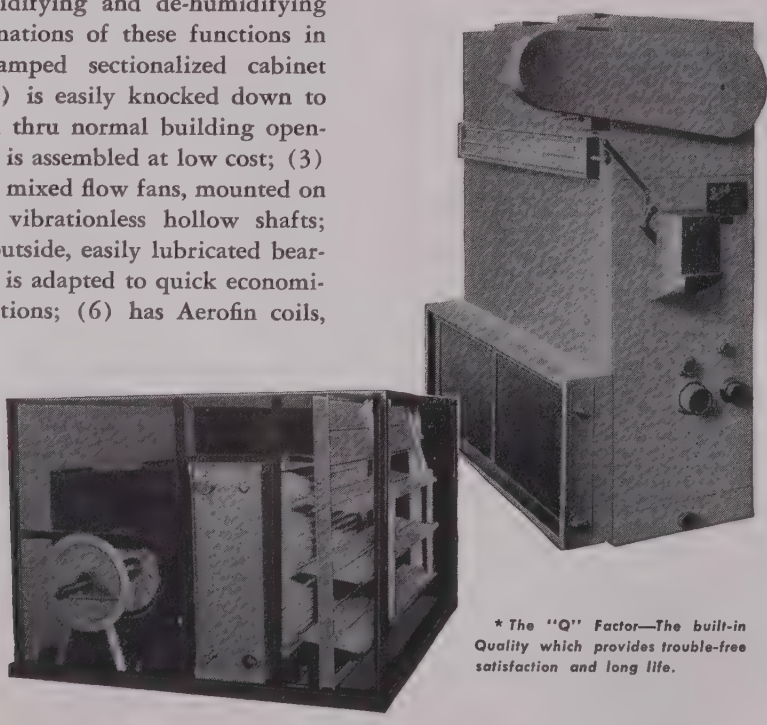


When "Buffalo", more than twenty years ago, first offered sectionalized "PC" comfort conditioning cabinets, to industry and commerce, there was little competition.

Designed to provide a practical factory-made unit for year-'round air conditioning, these cabinets were quick to catch the favor of both users and contractors. Today we have heating, cooling, cleaning, humidifying and de-humidifying or combinations of these functions in a die stamped sectionalized cabinet which (1) is easily knocked down to be moved thru normal building openings; (2) is assembled at low cost; (3) has quiet, mixed flow fans, mounted on oversized vibrationless hollow shafts; (4) has outside, easily lubricated bearings; (5) is adapted to quick economical insulations; (6) has Aerofin coils, the world's best; and (7) stays on the job.

No wonder the contractor likes to install "PC" Cabinets! And no wonder users like them. They have the "Q" Factor*. You can buy less for less, but not more for more!

"Buffalo" Sales Representatives are anxious to help you make the right selection.



** The "Q" Factor—The built-in Quality which provides trouble-free satisfaction and long life.*

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DIAMOND JUBILEE 75TH ANNIVERSARY

VENTILATING | PRESSURE BLOWING AIR CLEANING | COOLING AIR TEMPERING | HEATING INDUCED DRAFT | FORCED DRAFT EXHAUSTING

FDCA



LEAN-TO SHELTER installed in test house N was a type that a home handyman might b for about $40. Seated model (before blast) sh how to use it.

suffered "appreciably greater damage th expected," said Dr. Robert Crosbie, A architect. AIA observer Brazier, who mained three days after the explosion complete his examinations, confirmed t "very little deformation was visible fr the outside" of this structure, but the str tural damage was severe.

Crosbie reported: 75% of the 12' living-ro floor joists parallel to the front of the ho that faced the blast were buckled. Those in fr of the fireplace pulled away from header bea Shorter-span dining room and kitchen floor jo suffered less damage, and a 6' center hall fl was unaffected. Walls throughout the house w damaged and at least 10% of the plaster ceili fell. Room and closet doors were wrenched fr their hinges. Metal Venetian blinds were sh

(continued on p. 6

Internati

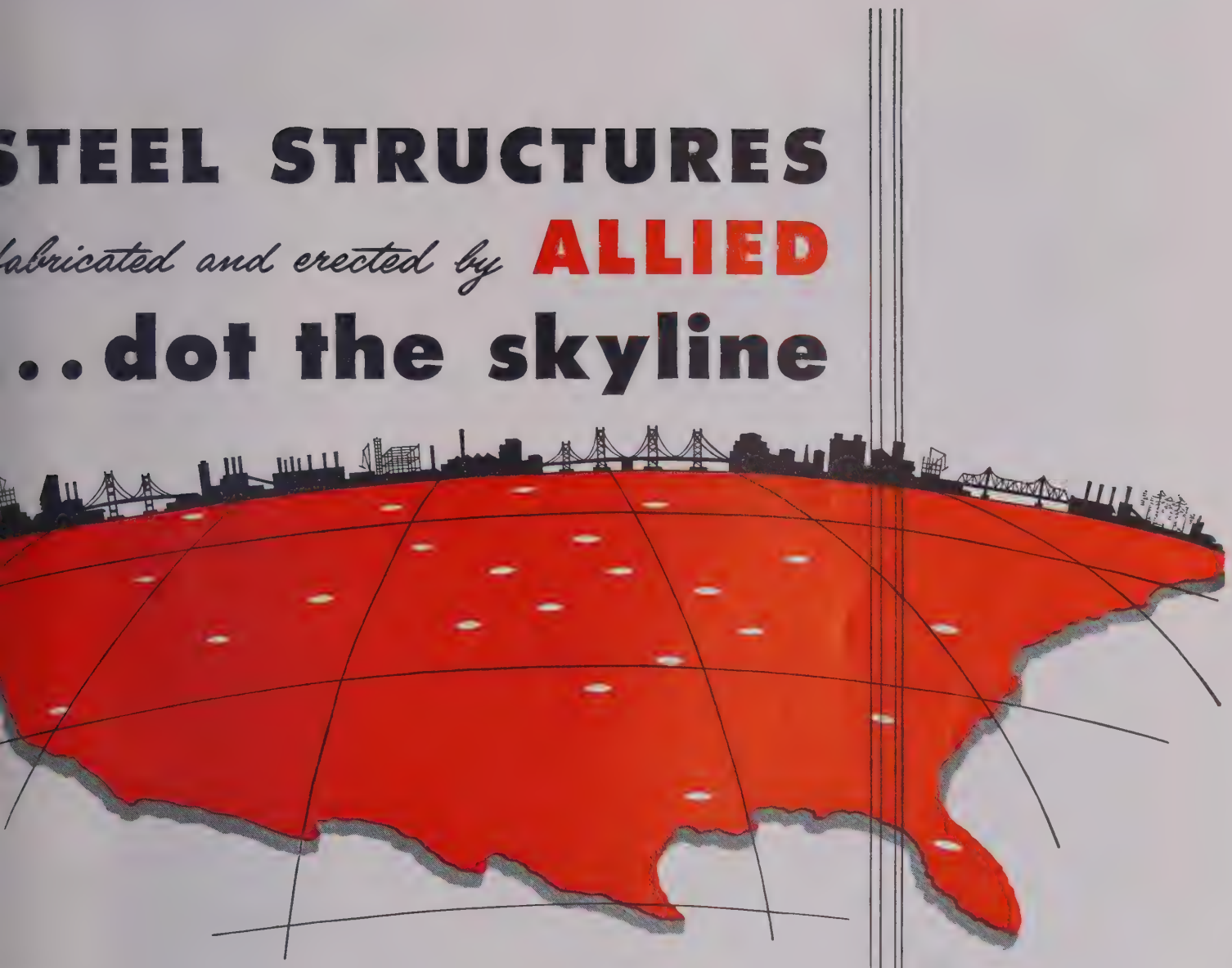


DESPITE COLLAPSE of house No. 1, the lean basement shelter protected mannequin fr falling beams, although not from radiation.

STEEL STRUCTURES

fabricated and erected by ALLIED

..dot the skyline

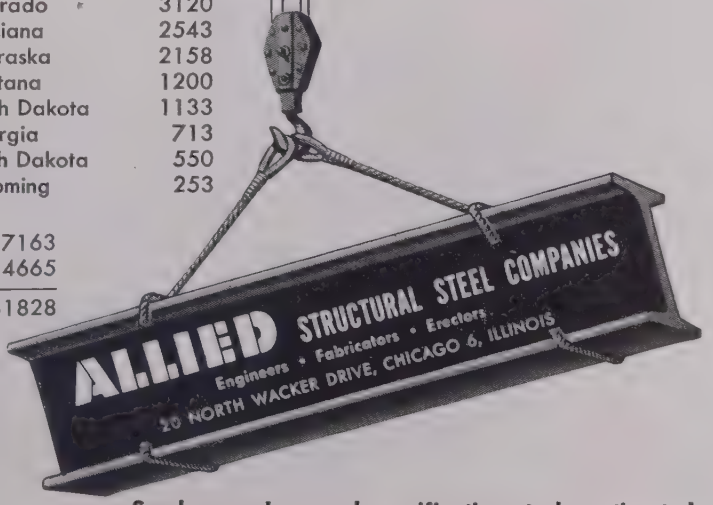


mbling factory buildings; tall office build-s; huge bridges over mighty rivers; retail re buildings; buildings for schools, colleges, ports, and hospitals; super highway free-ys . . . are all regular jobs for Allied. Wher-ever steel is to be fabricated and erected, Allied's three large fabricating shops are equipped to deliver on time. Typical of the states where structures are in process or re-cently completed are the following:

State	Tonnage	State	Tonnage	State	Tonnage
llinois	46601	• Kansas	7406	• Colorado	3120
Kentucky	31641	• California	5851	• Louisiana	2543
Minnesota	22168	• Missouri	5700	• Nebraska	2158
Ohio	17801	• Wisconsin	5649	• Montana	1200
owa	17644	• Florida	4878	• North Dakota	1133
Washington	17521	• Michigan	4409	• Georgia	713
Tennessee	11118	• Arkansas	3980	• South Dakota	550
ndiana	9630	• West Virginia	3496	• Wyoming	253

Total Tonnage United States	227163
Export	4665
Grand Total Tonnage	231828

NOTE: A twelve-page calendar for 1953 is available upon request. It illustrates some of the newest projects. Please use your company letterhead in writing for it.



Clinton Bridge Corporation

Gage Structural Steel Corporation

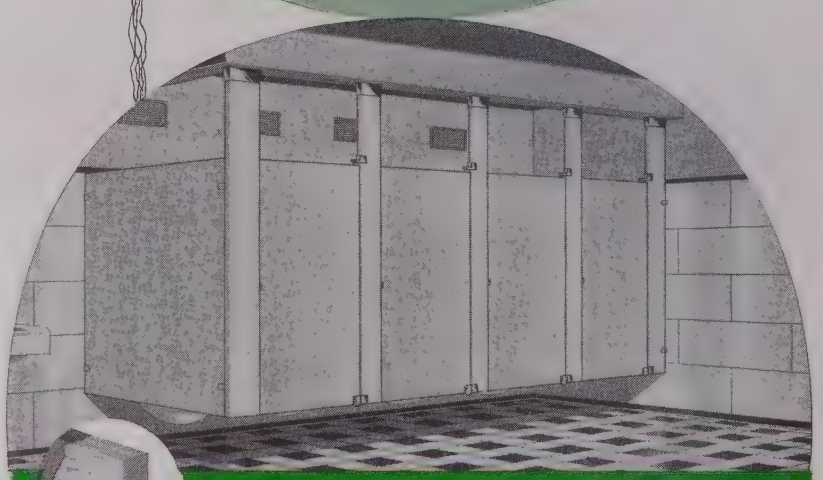
Midland Structural Steel Corporation

Send your plans and specifications to be estimated.

bricators and erectors of structural steel for highway and railroad bridges; industrial, office, school, and government buildings; airport structures; harbor facilities.

now FIAT offers
a complete new line of
toilet compartments

FIAT engineering has developed
a new type construction that results in
streamlined beauty with increased
strength and durability.



the new Aristo CEILING HUNG COMPARTMENT

FIAT, and only FIAT has solid wood cores (see inset) between two sheets of steel in the pilasters where superior strength is needed. This is an exclusive feature in the Aristo Ceiling Hung and the Aristo Floor Supported Compartments. Other FIAT exclusives are new theft proof screws, concealed type fastenings, and newly designed chrome-plated hardware parts. FIAT compartments are made of the finest stretcher-leveled furniture steel, either cold rolled or bonderized-galvanized. They are finished with a primer coat and two coats of baked-on durable enamel in white or any combination of eight colors, producing a beautiful two-tone effect.

Made by FIAT
first in showers

SPECIFY FIAT FOR—
• Price
• Quality
• Appearance
• Adaptability
• Prompt Delivery

SEE SWEET'S 21b Fi ARCHITECTURAL ...or write for our complete NEW CATALOG

Included in the new line are:
Aristo Ceiling Hung Compartments
Aristo Floor Supported Compartments
Duro Flush Type Compartments
Permo Panel Type Compartments
Junior Size Compartments
Hospital Cubicles
Dressing Compartments

FIAT FIAT METAL MANUFACTURING COMPANY
THREE COMPLETE PLANTS—ECONOMY • CONVENIENCE • SERVICE

Long Island City 1, New York
Franklin Park, Ill. (Chicago Suburb)
Los Angeles 63, California

In Canada: Porcelain and Metal Products, Ltd. Orillia, Ontario

ded by flying glass and 95% of windows sashes were torn out.

Brazier reported: about 25% of the first-to ond-floor front studs failed, mostly those cl to windows and doors, where there was gre rigidity. Second-floor-to-roof studs suffered l less damage, apparently yielding more with blasts. All the front roof rafters were sna at the center point between plate and ridge

Shock of 2 psi. One published re said the shock wave on the face of h No. 2 was calculated in advance to 2 AEC officials were unperturbed by this port, but declined to confirm or deny The calculation involved the force at 7, from an explosion rated the equivalen 15,000 tons of TNT, compared with 20,(ton Hiroshima and Nagasaki blasts.

Federal Civil Defense Administrator Peterson, who said even he had tro obtaining all the information he would from AEC, was asked why the struct tests were made with what amounted "baby" bomb. He explained it was marily a weapons test with side civil fense features. Other building parts wil tested in bigger explosions later.

Executive Vice President Leo Bodin the National Lumber Manufacturers A told a Portland, Ore., lumbermen's m ing the tests helped demonstrate that w houses withstand atomic explosions be than other construction "because of wo resiliency and capacity to absorb sho

Regional codes spreading NAHB boosts BOCA's rule

Directors of three major regional build codes were stung last month at a parad ical recommendation of NAHB Code C mittee Chairman E. J. Burke, Jr. "to w off the trend toward adoption of a natio code." Burke proposed adopting the ba code of the Building Officials Confere of America as NAHB's national code.

Protested Southern Building Code C gress Director M. L. Clement: "A regio code is the only answer for sound and s reduction in construction costs. . . . It c tainly does not rest with a national bui ing code. For over 40 years we have h

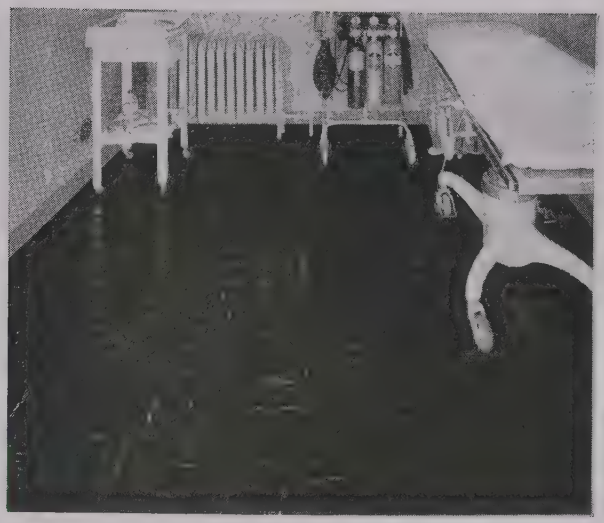
(continued on p.

HOW REGIONAL CODES SPREAD IN '52

Code or sponsor	*Inception date*	*Total City adoptions*	*Increase since 1/52*	*Total (milli*
Pacific Coast Bldg. Officials Conference...	1927	660	33	22
Natl. Board of Fire Underwriters	1905	550	42	—
Southern Bldg. Code Congress	1945	463	71	16
Bldg. Officials Conference of Amer.....	9/50	125	35	5
Natl. Electric Code...	11/49	2,000	1,355	95
Natl. Plbg. Code....	6/51	726	489	5

Safety first...

Service always





CONDUCTILE static-conductive tile shown in Children's Hospital and Shadyside Hospital, Pittsburgh, Pa., manufactured by Vinyl Plastics, Inc., Sheboygan, Wisconsin.

Long-lasting static-conductive flooring reduces danger of explosion in operating rooms

Ignition of flammable gases caused by electrostatic spark discharges to floors in operating rooms can be virtually eliminated by installing new static-conductive flooring manufactured of VINYLITE Brand Resins.

Safety of this VINYLITE Resin flooring is evidenced by an official report stating "Bi-monthly check is made on these floors. The resistance has remained constant at 100,000 ohms." This is well within the safe practice limits as specified by the National Fire Protective Association.

Special service, fine appearance, and ease of maintenance make VINYLITE Resin flooring preferred everywhere. Resilient, easy on the feet, quiet . . . these floors are quickly installed without serious interruption of services.

The non-porous surface of VINYLITE Resin tile resists scratching and scuffing and is also resistant to ether, alcohol, acetone, iodine, blood, acids, alkalies, and similar materials encountered in hospital operating rooms. It can be cleaned with any soap or detergent.

These qualities make VINYLITE Brand Resins exceptionally useful for hundreds of other products for home, business, defense and basic industries.

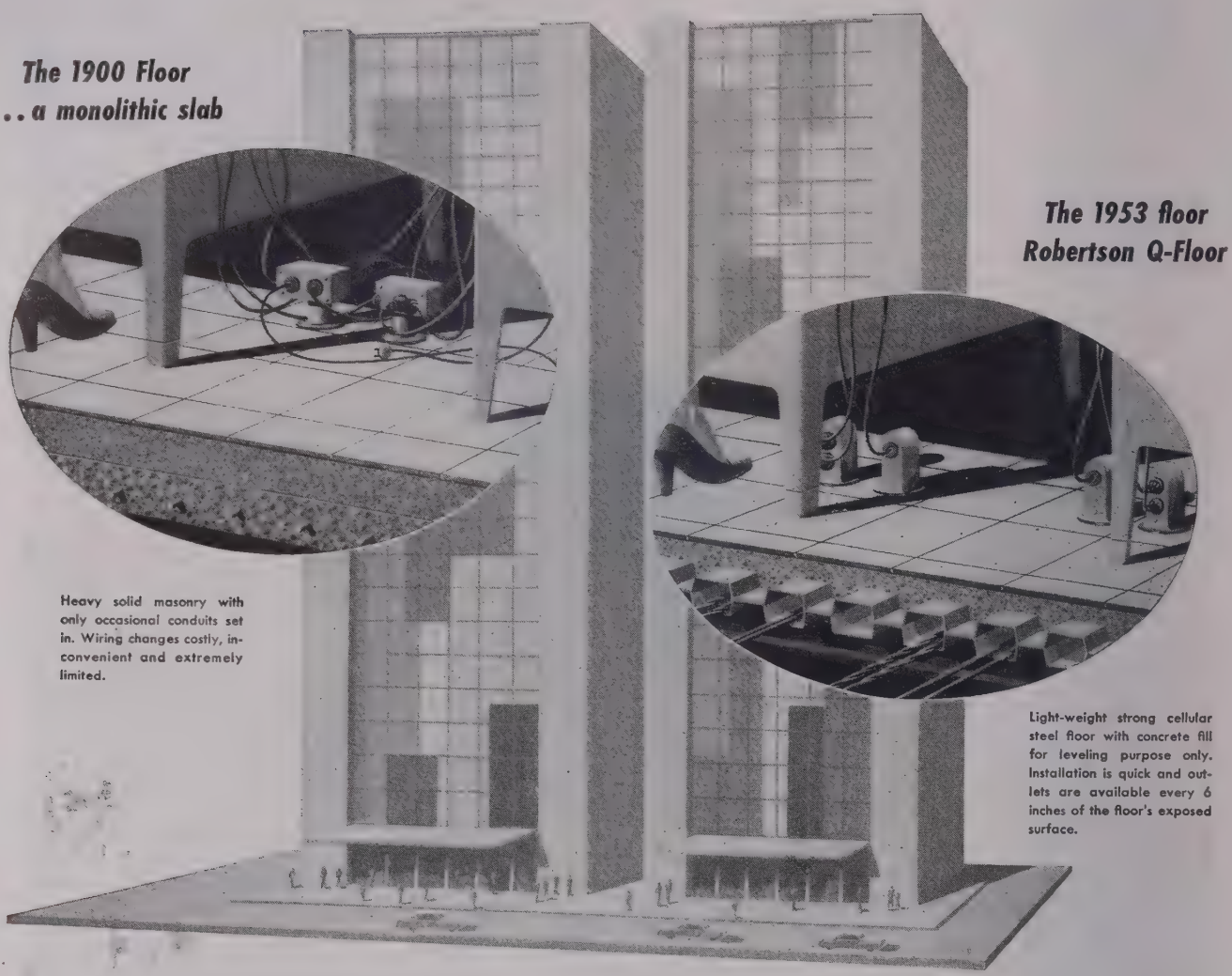
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Will the Building You Design in 1953 Have 1900 Structural Floors?

The 1900 Floor
... a monolithic slab



Heavy solid masonry with only occasional conduits set in. Wiring changes costly, inconvenient and extremely limited.

The 1953 floor
Robertson Q-Floor

Light-weight strong cellular steel floor with concrete fill for leveling purpose only. Installation is quick and outlets are available every 6 inches of the floor's exposed surface.

Q-Floor provides truly modern structural floor construction because it permits quick change of electrical outlets at 6-inch intervals over the entire building. This effectively eases the time and expense of moving equipment and partitions. The advantages of Q-Floor on the construction job are many, and add up to lighter weight and resulting lower cost. Then too, Q-Floor speeds construction which results in earlier occupancy. When you design a new building, you'll find it will pay dividends to insist on Q-Floor and stave off obsolescence in the years to come. Write for literature.

the finest buildings in the country have . . .

Q-FLOOR

A product of **H. H. ROBERTSON COMPANY**

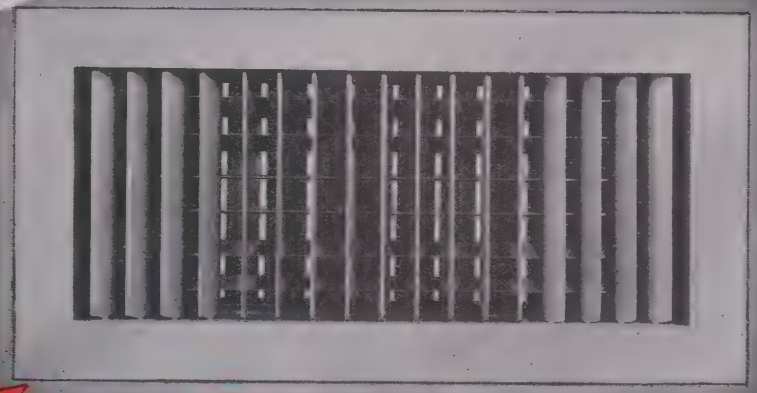
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4 WAY Air foil REGISTER

Series 277 combines 4-way directional grille with opposed blade damper. This provides both maximum directional control and positive volume control. Opposed blade dampers supply uniform distribution of air over entire grille face.

LATEST AND FINEST PRODUCT OF TITUS ENGINEERING. It stands out... by any comparison ... in its *beauty, rugged design ... superior diffusion performance.*

FRAMES ... Heavy gauge cold-rolled steel. One piece.

BORDER ... 1¼" beveled edge.

LOUVERS ... Streamlined. Smooth as glass. Solid section.

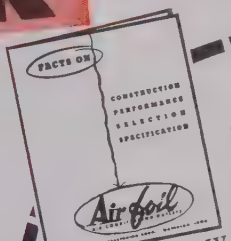
LOUVER DEPTH ... ¾". Assures positive air deflection.

SCREW HOLES ... Countersunk for No. 6 screws. Spaced ½" on center from outer edge of border.

FINISH ... Gray lacquer primer as standard. Other finishes available at slight extra cost.

GASKET ... ¼" sponge rubber.

ADJUSTMENT ... Individual louver adjustment for front and center set of louvers. Opposed acting damper blades in rear are key operated.



• BRAND NEW 1953 CATALOG. Simplifies specifying. Provides all engineering data you need.

REQUEST YOUR FREE COPY NOW, including all specification and engineering data plus facts on construction, performance and selection of outlets.

CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED

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- ☐ Return air grilles and registers
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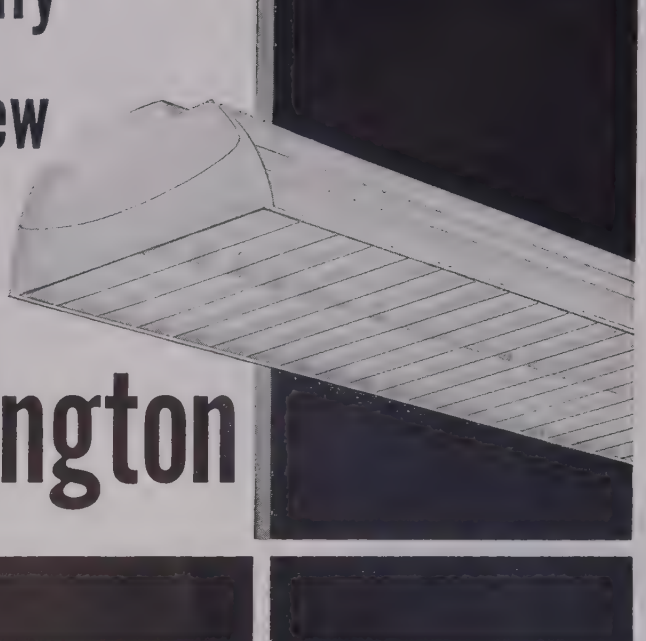
- ☐ RUSH information on Series 277.
- ☐ Send complete New 1953 catalog.
- ☐ Send literature on above checked items.

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the new
miller
Lexington

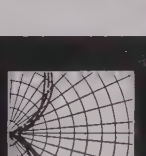


for correct
school lighting

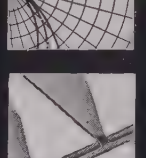
The new Miller LEXINGTON—a distinct advance in school lighting—gives you correct lighting of high efficiency and extremely low brightness—lighting that eliminates eye strain and improves physical well being of students. It provides it at L. O. C. (low overall cost)—through engineering features that make for easier, quicker installation, and materially reduce cost of maintenance, making it more economical over the years. You get more Value for your lighting dollars.

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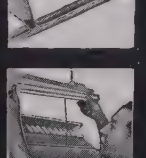
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High lighting efficiency—extremely low brightness



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Engineered for easy lamping and servicing



Modern design—architecturally styled for interior harmony

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the same thoughts on national codes. N
of them has succeeded. . . . There is
one basis for unification of building c
and that is on physical properties, suc
live loads. . . . Climatic factors play an
portant part [making a national code
practical]. . . . The quicker everyone
izes this the better will be the codes
the building industry."

Climate arguments. BOCA itself, i
dentally, belongs to the Joint Commi
on Building Codes, which similarly
claims that "climatic conditions and o
factors may justify differences in requ
ments in different regions." And in
the Joint Committee has been aided by
US Chamber of Commerce, which
urges local communities to study all
major codes, does not single out any
special recommendation. Burke's h
city of San Antonio, Tex. (pop. 450,0
is the biggest operating under the Pa
Coast Building Officials Conference.

Mounting adoptions. Since FORUM's
vey a year ago (Feb., '52, News) the
major regional codes have gained 191
adherents, the National Electric and Plu
ing Codes 1,844 more. Survey highlig

▸ **PCBOC**—All Atomic Energy Commission
tions use the PCBOC code, which also is
official code of Japan, according to Mana
Secretary Hal C. Colling. Since Jan. 195
has been adopted by San Diego and Berk
Calif.; Spokane; Tacoma; Tucson, Ariz.;
banks, Alaska, and Wayne County, Mich.
last also reported adopting the BOCA code

▸ **SBCC**—This code is reducing southern
struction costs "beyond imagination," claims
rector Clement. New subscribers: Birmingh
Ala.; Nashville and Knoxville, Tenn.; Roan
Va.; thirty-two other ratifications are pend

▸ **BOCA**—Basic Building Code Correlator Ge
E. Strehan reported distribution of 8,000 co
of the BOCA code since publication in Sept., 1
ratification by a total of 125 communities (De
and St. Paul pending), and association mem
ship in 500 municipalities.

Fire underwriters' stand. Largest ci
adopting the National Board of Fire U
derwriters code since Jan., 1952 w
Charleston, S. C.; Englewood and W
field, N. J.; Burlington, Vt.; Enid, Okl
Bellport, Miss. In February, NBFU a
distributed answers it gave last fall to
series of questions an American Munici
Assn. committee asked about commun
fire insurance rating procedures, includi
this exchange:

"Is there any valid reason for insisting on
National Building Code? Are not some o
codes equally good? Does not NBFU discour
the improvement of other codes by insisting
use of its own code?

"The other . . . codes are not a substitute

(continued on p.

You see all the floor in a rest room with a fixture-bare floor

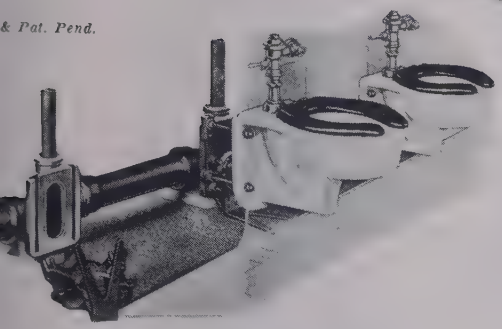


The Fort Worth National Bank Building, Fort Worth, Texas.
Architect-Engineers: Preston M. Geren; Consulting Architects: Shreve, Lamb and Harmon Association of New York; Mechanical Engineers: Yandell, Cowan and Love, Dallas; General Contractors: Thomas S. Byrne, Inc.; Plumbing Contractor: Schmidt Plumbing Company.



FIXTURE-BARE FLOORS give the effect of spaciousness to rest rooms

. . . reduce the over-all cost of building



& Pat. Pend.

WALL-TYPE FIXTURES
Installed With and Supported By

ZURN

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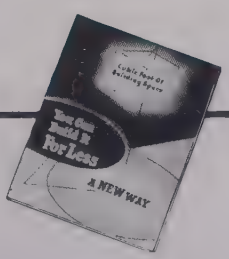
Make Possible Fixture-Bare Floors

Over 500,000 Wall-Type Fixtures Now Installed With **ZURN ENGINEERED CARRIER SYSTEMS** In Buildings Of Every Type From Coast to Coast. Write for list of buildings having rest rooms with fixture-bare floors.

An installation of off-the-floor plumbing fixtures effects many substantial savings in construction costs; permits lower ceilings and more flexibility in planning rest rooms; requires less space for walls; *permits use of any type wall and floor construction; leaves entire floor area intact* thereby lifting sanitation to a new high and reducing maintenance of cleanliness to an all-time low, and *simplifies piping layout.* Important savings in quantity of materials and in time costs can thus be obtained when rest rooms are specified to have fixture-bare floors. Insist on wall-type plumbing fixtures installed with and supported by Zurn Engineered Carrier Systems and you will protect your client's investment against untimely obsolescence.

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Sales Offices in All Principal Cities
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Write For Booklet Entitled "You Can Build It and Maintain It For Less A NEW WAY". It contains up-to-date factual information for planning modern rest rooms.



J. A. ZURN MFG. CO.
PLUMBING DIVISION—ERIE, PA., U. S. A.
I want to know more about the influence wall-type plumbing fixtures can have on the over-all cost of a building. Please send booklet entitled, "You Can Build It and Maintain It For Less A NEW WAY".

Name and Title.....
Company.....
Street.....
City and State..... *Dept. AF*
Please attach coupon to your business letterhead.

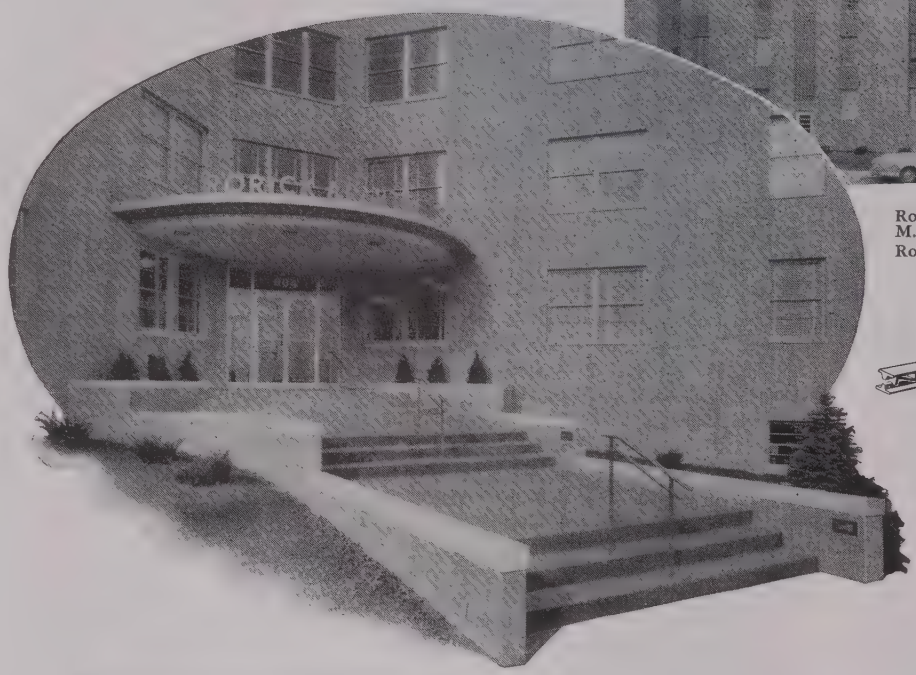
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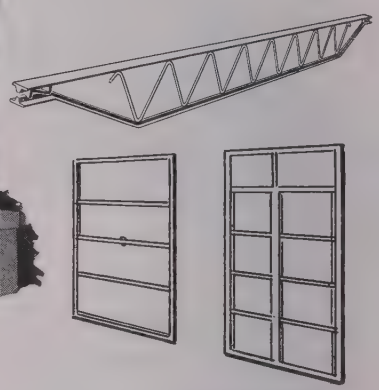
Architect M. J. Lahr says:

"To facilitate speedy, economical design and erection, we specified Truscon "O-T" Steel Joists, Steel Casements and Double-Hung Windows for the Rorick Apartment Building, at Omaha, Nebraska"





Rorick Apartments, Omaha, Neb.
M. J. Lahr, *Architect*
Rorick Construction Co., *Contractors*





● Big news in Omaha is the imposing new eleven-story Rorick Apartments. It illustrates the architectural distinction and the operating efficiency possible with Truscon Steel Building Products, and with one sure source for such diverse commodities as "O-T" Steel Joists and Double-Hung Steel Windows and Casements.

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Truscon Steel Windows of all types go in fast. They're delivered completely factory-assembled. Truscon Series 138 Double-Hung Steel Windows, completely weatherstripped in stainless steel, for the living rooms afford maximum comfort on the coldest days; Truscon Residence Casements in the sun rooms provide maximum ventilation in the summer weather.

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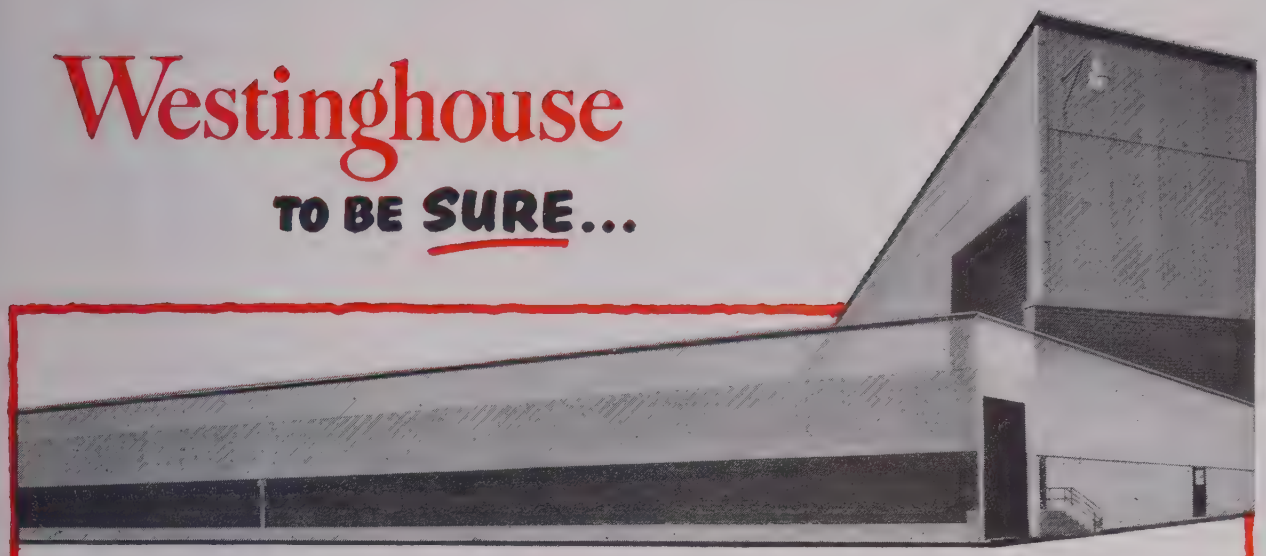
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put sidewalls of Carey stone on their new TV-radio factory!

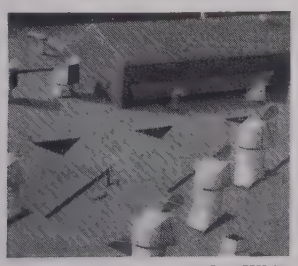
By choosing Careystone Corrugated, Westinghouse made sure of low maintenance costs and absolute fire safety for the lifetime of their new TV-radio plant at Metuchen, N. J. For Careystone never needs preservative treatment, will not rot, rust, corrode or burn . . . actually *gains* in strength with exposure to weather. Careystone resists termites and rodents, too. And its attractive, natural gray color saves painting expense.

Careystone is made of virtually indestructible asbestos and Portland cement, corrugated for great structural strength. It is quick, inexpensive and easy to erect. Comes in big 42" x 8' sheets that cover fast. Can be applied over steel or wood framing; sawed to fit irregular areas.

Careystone is suitable for exterior or interior walls, partitions, storage buildings, to highlight a few uses. If you plan a new plant, or addition, give serious thought to the advantages only Careystone can deliver. Ask your Carey Industrial Sales Engineer for the latest Careystone Corrugated Manual No. 52–84 fact-filled, money saving pages. Or, write on your letterhead for a copy today. Address Dept. AF-4.



Carey 85% magnesia insulation materials have weathered 24 years of continuous service on the fractionating tower and vapor lines of these atmospheric and vacuum stills at Gulf Oil Corporation's Port Arthur, Texas plant.



Built-up roofing at the White Motor Co. truck plant in Cleveland, Ohio. Kept in prime condition by tough, lasting Careyclad and Carey Fiber Coating—formulated to withstand the grinding abrasion of weather, corrosive fumes, and time!

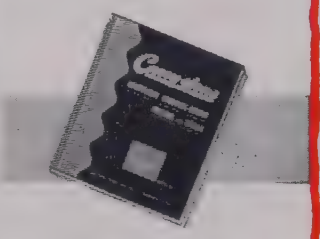


Over 100,000,000 crossings without one cent for repair or replacement! That's the toughness and durability record of Carey Asphalt Plank surfacing on the Harlem River span of famous Triborough Bridge in New York City!

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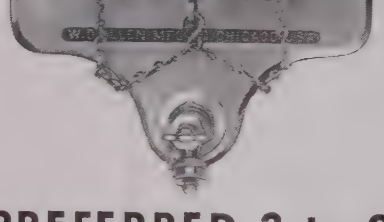
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CHICAGO 6 • NEW YORK 7

the code sponsored by NBFU. There are fundamental differences dealing primarily with construction features designed to prevent the spread of fires which cause conflagration or total loss. In grading any city the NBFU code is checked item by item with existing codes. The extent of enforcement is also considered. Credit is given for existing favorable conditions such as a high percentage of fire resistant roofs. . . . If buildings are poorer than those provided by NBFU standards then the city will not only get deficiency points now, but it will receive added deficiency points progressively as structural conditions deteriorate.

"Many owners may be willing to pay higher fire insurance because it is cheaper to pay such rates than to build or rebuild to high standards. However, substandard construction requires firemen to risk their lives and the persons visiting or working in such places to take greater risks."

Utility codes spread. Smooth sailing marked the spreading adoption of the National Electric and Plumbing codes. The electric code was adopted in Cleveland, San Antonio and throughout all of Massachusetts (except Boston). The plumbing code was ratified in Jacksonville. Miami and St. Petersburg, Fla.; Abilene and Emporia, Kans.; Baton Rouge, La.; and Phoenix, Ariz. Denver adopted both.

Following New York's lead, New Jersey was completing the draft of a state code (reported closely following the BOCA code) that municipalities could adopt by reference. California received a report on a four-year study of conflicting and overlapping building laws by a legislative committee headed by Pasadena Assemblyman A. I. Stewart. A ten-man commission, including an architect, engineer and contractor was recommended. Its first task: to start preparing a state building regulation code.

Building officials training course starts in Detroit

The first "in-service" training course for building officials in the US started Feb. 26 in Detroit, jointly sponsored by Wayne University and the Building Officials Conference of Michigan. Based on teaching materials prepared by Syracuse University's Dr. Spencer Parratt with an HHFA research grant, the course was being taught by professors in Wayne's department of public administration.

First lectures, frankly experimental, dealt largely with the legal aspects of building department administration, including such topics as: judicial remedies for private citizens and building officials; legal background of regulations; zoning compliance; plan checking. Enrolled were 100 local building officials from the Detroit area, who paid a nominal, $5 registration fee. Building men hoped other universities would begin similar courses.

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Indianapolis, Indiana, 1803 North Meridian Street, Hickory 752
Kansas City 2, Missouri, 297 Plaza Theatre Building, Jefferson
Little Rock, Arkansas, 319 Commercial National Bank Building
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Milwaukee 3, Wisconsin, 1412 Majestic Building, Marquette 8
Minneapolis 3, Minnesota, 203 Wesley Temple Building, Filmo
Nashville 3, Tennessee, 1905 West End Avenue, 42-5694
New Orleans 12, La., 507 International Trade Mart Bldg., Raymo
New York 17, New York, 19 East 47th Street, Eldorado 5-7700
Omaha 2, Nebraska, 603 Redick Tower, Jackson 0614
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Philadelphia, Pennsylvania, (Camden), Lombard 3-8200
Phoenix, Arizona, P.O. Box 2289, 3500 W. Van Buren, 2-1711
Pittsburgh 19, Pennsylvania, 3210 Grant Building, 1-3445
Portland, Oregon, 935 N.W. 12th Avenue, Room 213, Atwater 9
Richmond 19, Virginia, Fifth & Cary Streets, 7-2941
Rochester 4, New York, 512 Temple Building, Hamilton 6250
Saginaw Michigan, 702 Second National Bank Building, 5-213
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Tulsa 14, Oklahoma, 214 Boulder Building, 5-1400
Washington 6, D.C., 503 Center Building, National 5336
Wichita 2, Kansas, 304 Wheeler-Kelly-Hagny Building, 4-5976
Youngstown 12, Ohio, 5621 Market Street, 2-1913

SERVICE REYNOLDS ALUMINUM to Architects

Where and When You Want It

Capable, experienced Reynolds Architect Service Representatives are available without obligation for assistance on your aluminum design problems. This nation wide service is Reynolds way of saying, "Here's help toward getting the very most from aluminum." It's proof that Reynolds is keeping pace with architects' demands on aluminum to achieve a wide variation of expression . . . in aluminum's many logical applications.

To gain the most from aluminum's advantages, also include standard aluminum products in your planning. Reynolds distributors, with complete stocks of architectural aluminum mill products are located across the country. Names of aluminum building products manufacturers will be furnished on request.

Reynolds Metals Company,
2528 South Third Street,
Louisville 1, Kentucky.

MODERN DESIGN HAS ALUMINUM IN MIND

DESIGN FOLIO

A completely new manual on architectural aluminum with drawings for direct tracing. Please request on business letterhead.

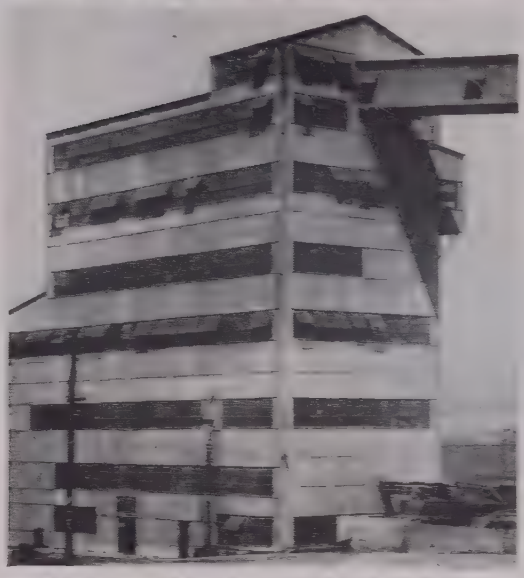
For quick reference see catalog $\frac{5a}{Re}$ *in Sweet's File*



Be sure to see "Mr. Peepers" every Sunday night, 7:30 EST, NBC-TV; hear "Fibber McGee and Molly" every Tuesday night, 9:30 EST & PST, NBC.

CORRUGATED *Asbestos* TRANSITE*

For Permanent Construction



This large coal breaker, roofed and sided with Johns-Manville Corrugated Transite, will provide many years of fire safety and low cost maintenance.

For Permanent Protection



Johns-Manville Corrugated Transite effectively protects the delicate instruments in this new airport control tower from the effects of severe weather conditions and fire.

You build economically and quickly with these versatile fireproof and weatherproof asbestos building sheets

In the past quarter century, Johns-Manville Corrugated Transite has proven an ideal material for roofs and for sidewalls of industrial, commercial, institutional and agricultural buildings. Made of asbestos and cement, the large sheets are easy to handle, go up quickly with a minimum of framing. Practically indestructible, Corrugated Transite is fireproof, rotproof, weatherproof, needs no paint or special treatment to preserve it, and can be salvaged and re-used if necessary.

Today, Corrugated Asbestos Transite is also used increasingly for smart interiors . . . the streamlined corrugations and attractive shadow lines that give it such unusual architectural appeal for exteriors offer unlimited interior design possibilities.

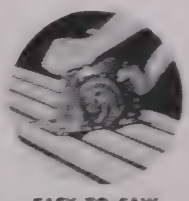
. . .

Investigate J-M Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, long-lasting, trouble-free structure regardless of size or purpose. For complete details write Johns-Manville, Box 158, Dept. AF, New York 16, N. Y. In Canada write 199 Bay Street, Toronto, Ontario.

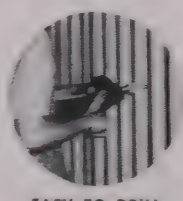
*Reg. U. S. Pat. Off.



EASY TO FASTEN TO STEEL



EASY TO SAW



EASY TO DRILL



EASY TO NAIL TO WOOD



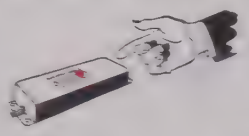
JM **Johns-Manville** *Asbestos* **CORRUGATED TRANSITE**

Architectural firm tells why it always specifies CERTIFIED BALLASTS for fluorescent lighting



Fulton, Krinsky & DelaMotte, prominent Cleveland architectural firm specializing in schools, requests CERTIFIED BALLASTS in *all* fluorescent fixtures they specify.

Mr. Barton Quarm, their electrical engineer, says, "We always specify Certified Ballasts because we want trouble-free installations. Client satisfaction is assured by using Certified Ballasts."



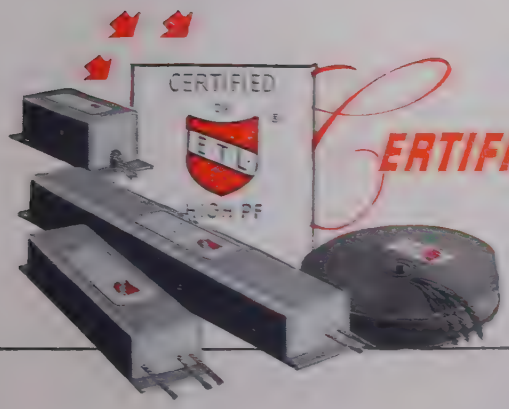
More and more CERTIFIED BALLASTS are being specified and used because CERTIFIED BALLASTS assure—

Full Lamp Life **Rated Light Output** **Maximum Ballast Life**

CERTIFIED BALLASTS are made to precise specifications, then tested by Electrical Testing Laboratories, Inc., which certifies they conform to these high standards.

Write for complete information on the types of CERTIFIED BALLASTS available from each participating manufacturer.

Participation in the CERTIFIED BALLAST program is open to any manufacturer who complies with the requirements of CERTIFIED BALLAST MANUFACTURERS.



CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting

2116 KEITH BLDG., CLEVELAND 15, OHIO

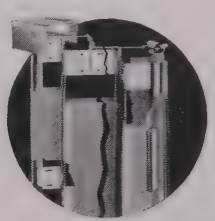


Construction costs go down everytime you fit FOLDOOR into your plans.

This famous fabric-covered folding door makes every cubic foot of space accessible and usable . . . provides wonderful new flexibility . . . allows new variations in room arrangements. It saves on total floor space required, saves wall or partition costs, saves on painting, trimming and hardware.

FOLDOOR is attractive, too—adds new beauty to every room, in doorway, hallway or as a wall. Its trim, pleat lines . . . the cornice top . . . the beautiful fabrics all lend distinction to any interior.

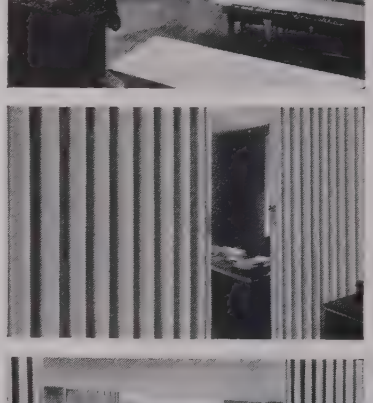
FOLDOOR belongs in every type, every size construction. For further information, see Sweet's Catalog or write for detailed specifications. Holcomb & Hoke Mfg. Co., 1545 Van Buren St., Indianapolis 7, Indiana.

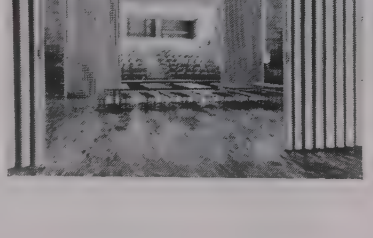


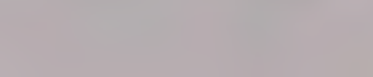
ONLY FOLDOOR GIVES YOU ALL THESE...

- Rugged steel frame, welded rods and rigid hinge-plates
- Vinyl plastic coverings, easy to clean
- Exclusive Multi-V design—with centerline support—requires less stack space
- Easy low-cost installations
- Curved, soundproof, switch-type and mechanically-operated models available
- Backed by 56 years of engineering and manufacturing experience









EVENTS

Association of State Planning & Development Agency's 8th annual conference, **Apr. 20-22,** Bond Hotel, Hartford.

American Institute of Steel Construction's 5th annual National Engineering Conference, **Apr. 22-23** Detroit. Sessions in Detroit Engineering Society building; hotel headquarters at Park Shelton, 1 East Kirby.

Royal Architectural Institute of Canada's annual assembly, **Apr. 23-25,** Royal York Hotel, Toronto

Concrete Reinforcing Steel Institute's annual meeting **Apr. 27-May 2,** Carolina Hotel, Pinehurst, N. C

New garden for The Museum of Modern Art, New York, will open **Apr. 29.** Designed by Philip C Johnson, a 175' x 100' sunken court will provide a variety of areas and backgrounds specifically suited to the outdoor display of different kinds of sculpture.

Scholarships—American Institute of Steel Construction will award ten $1,000 scholarships in 1953 to high school seniors who wish to become civil or architectural engineers. Applications accepted to **Apr. 30.** For information write AISC 101 Park Ave., N. Y. 17.

8th International Hospital Congress, May 25-30 at Church House, Great Smith St., Westminster London.

Canadian Hospital Council, May 18-20, at the Chateau Laurier, Ottawa, Ontario.

National Association of Building Owners & Managers' 46th annual convention, **June 7-11,** Pittsburgh.

Boston Art Festival for 1953, presenting painting and sculpture by leading New England artists will be held on eight full days and evenings **June 7-14,** at the Public Garden. Festival office 250 Boylston St., Boston.

National Store Modernization, Building & Maintenance Show, Madison Square Garden, New York. **June 9-12.**

British Architects' Conference, Canterbury and Folkestone, **June 10-13.** AIA visitors welcome. Write C. D. Spragg, RIBA, Sec'y., 66 Portland Place, London. W. 1.

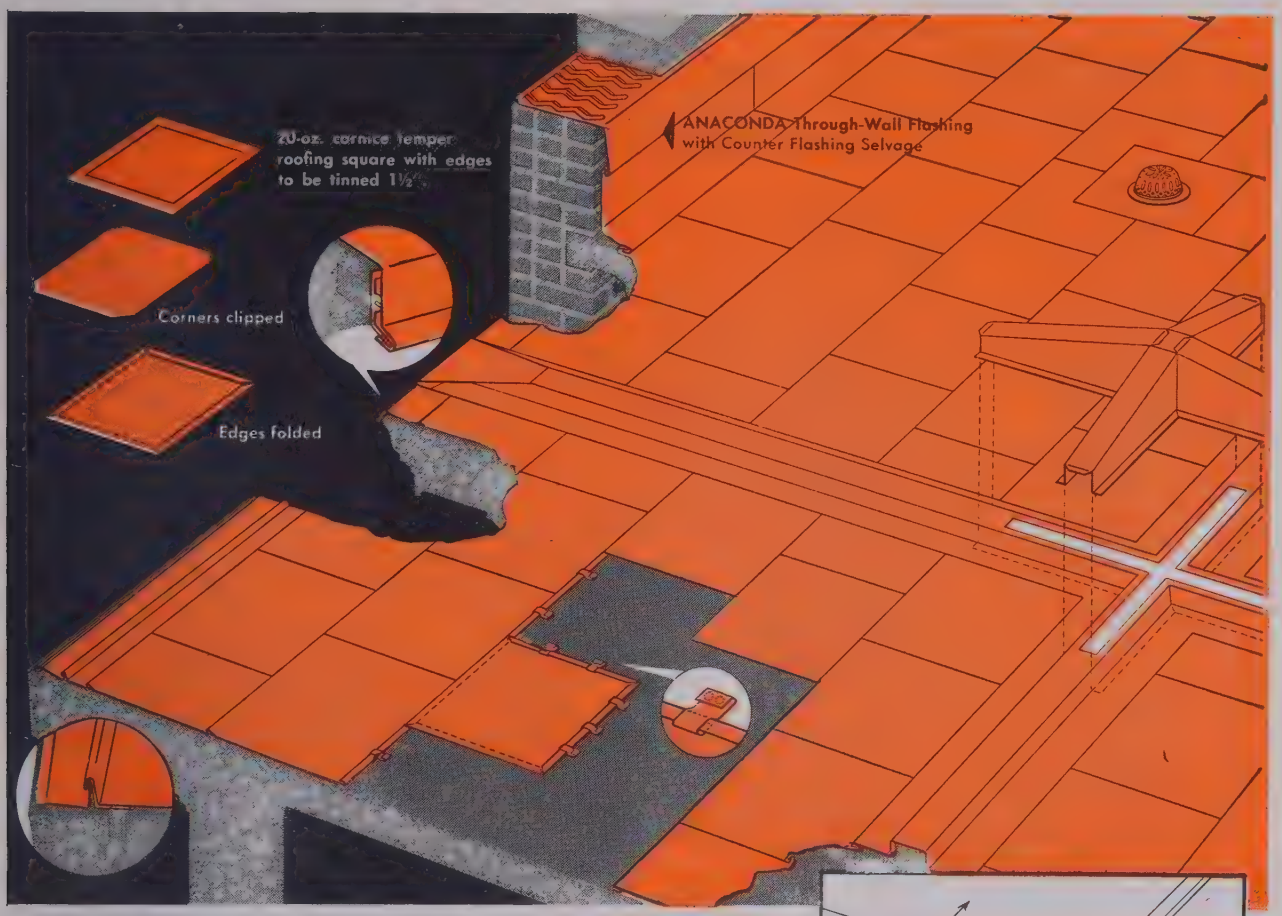
Forest Products Research Society's 7th annual meeting **June 15-17,** Memphis, Tenn.

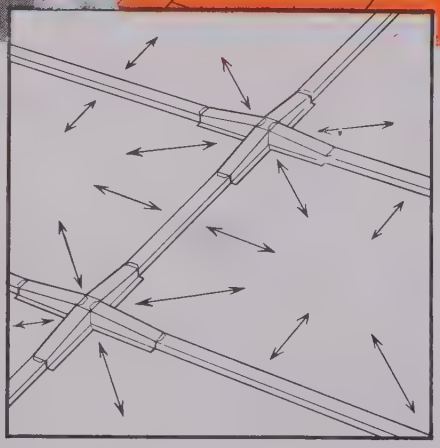
American Institute of Architects' annual convention, Seattle, Wash., **June 16-19.**

American Society for Testing Materials' annual meeting, **June 21-25,** Chalfonte-Haddon Hall, Atlantic City.

Competition—in connection with 4th Centenary of the city of São Paulo, next winter, an international exhibition of architecture will be held at the São Paulo Museum of Modern Art. Open to architects of all nationalities and to officially recognized schools. Awards in 11 categories, with a special prize to a young (under 35) architect and to a school. Submissions no later than **July 15.** For information, address: II Biennal do Museu de Arte Moderno de São Paulo, Rua 7 de Abril 230, São Paulo, Brasil.

National Association of Real Estate Boards' annual convention, Los Angeles, **Nov. 8-14.**





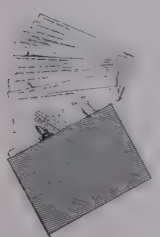
HOW TO PROVIDE FOR EXPANSION

in watertight, flat seam copper roofing

Flat roofing presents a special expansion-contraction problem because seams must be soldered to be watertight—and yet the metal should be allowed to expand or contract freely with changes in temperature.

This drawing illustrates how this problem can be met by dividing the roof into rectangular areas approximately 40-ft. square, separated by expansion battens with expansible intersections. This permits contraction or expansion of the copper to or from the center of each rectangle without causing excessive stress.

Note the construction of the expansible cover which caps the intersection and is soldered to the expansion battens. Note, also, the methods of finishing the roof edge for various types of building design. 6839



Do you have the FREE Anaconda file of drawings?

Each drawing shows a new or improved way to apply sheet metal. Each is printed on a separate 8½ x 11-inch page, handy for quick-reference filing. This entire series may be obtained absolutely FREE. Write today for Portfolio S to The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

for better sheet metal work—
use
ANACONDA® COPPER



Seattle's Efficient

MODERN SCHOOL ADMINISTRATION BUILDING*

Equipped with POWERS Temperature Control

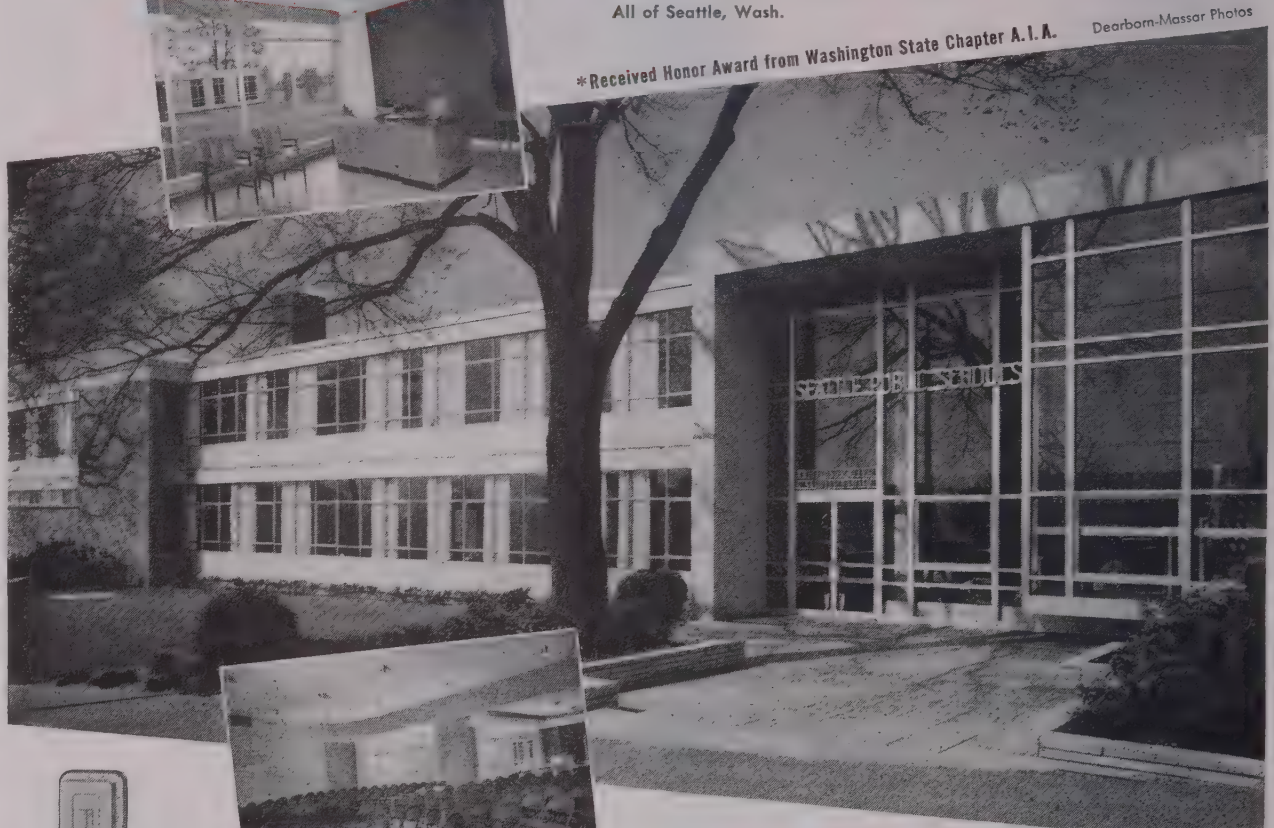
Taxpayers in Seattle may well be proud of this attractive building for it is an outstanding example of the trend to provide school executives with facilities as efficient and modern as the schools under their supervision.

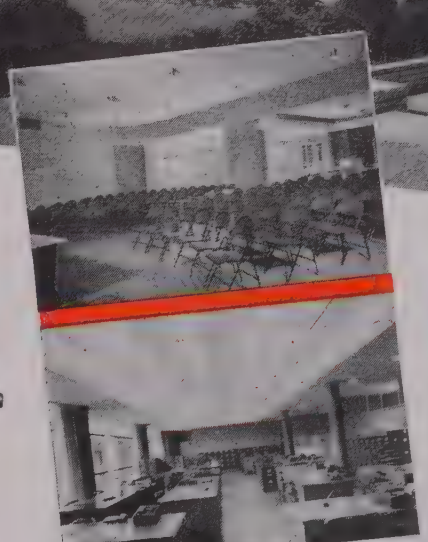
In the executive offices, conference rooms, library, audio-visual, child guidance, medical service and P. T. A. divisions, cafeteria, 200-seat auditorium and other spaces right-temperatured-air is assured by a Powers Pneumatic Control System.

Architects: J. Lister Holmes & Associates
Engineers: Marius Anderson & Associates
All of Seattle, Wash.

*Received Honor Award from Washington State Chapter A. I. A.

Dearborn-Massar Photos







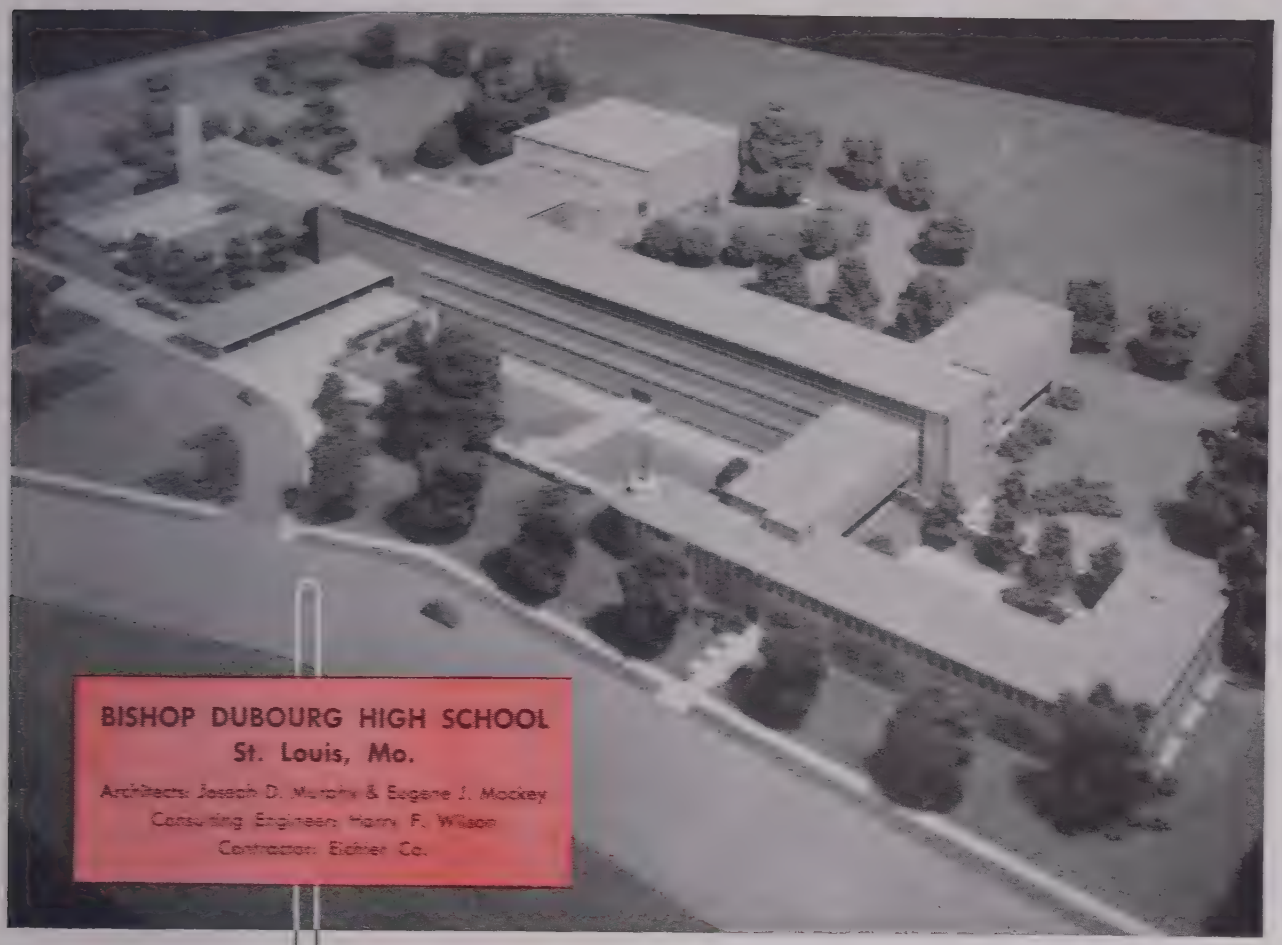


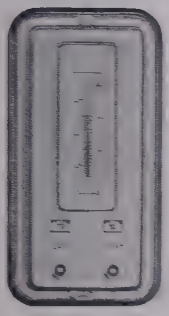
POWERS Pneumatic Systems of Temperature Control

. . . prevent OVER-heated rooms. Greater comfort, lower fuel bills and many years of dependable service make Powers control a highly profitable investment. Contact our nearest office for help in solving your temperature control problems.

(b1)

Established in 1891 • **THE POWERS REGULATOR COMPANY** • SKOKIE, ILL. • Offices in Over 50 Cities





173 POWERS Day-Night Thermostats control 226 valves on Convectors and 69 Unit Ventilators.

Another Outstanding Modern High School

POWERS *Controlled*

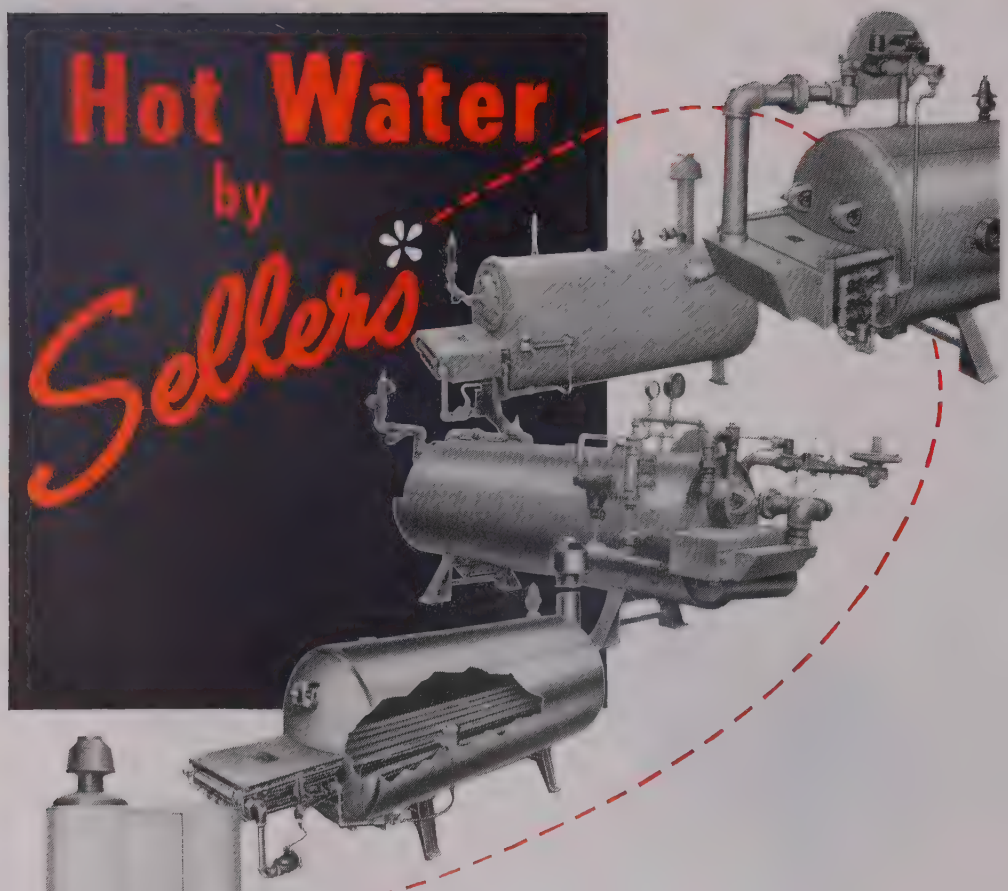
Among the many economical features included in the unique four story $3,000,000 Bishop DuBourg High School is a Powers pneumatic system of temperature control.

Superiority of Powers Unit Ventilator Control here will not only provide greater comfort but will hold down operating costs. Its continuous dependable operation is due to the basic simplicity of Powers Low-Limit Airstream Thermostats. They need no auxiliary devices to supplement their accurate control of Unit Ventilator discharge temperatures. Their adjustable sensitivity gives precise control.



Powers control of unit ventilators and convectors results in greater comfort and fuel economy. With today's high fuel cost Powers temperature control is a more profitable investment than ever before. When problems of temperature control arise contact Powers nearest office. Our more than 60 years of experience may be helpful to you.

Established in 1891 • **THE POWERS REGULATOR COMPANY** • SKOKIE, ILL. • Offices in Over 50 Cities

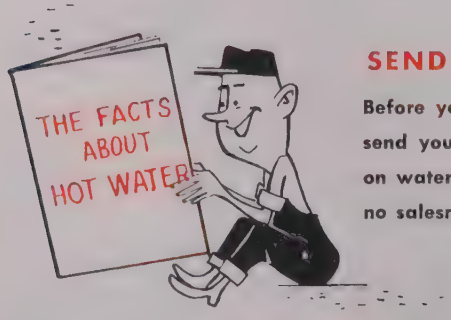


FIVE TYPES OF HEATERS . . .

—each designed for a particular service

Together they cover the entire field of large volume water heating—hard water, soft water, naturally corrosive, and zeolite softened water. Each heats water for ordinary service and for high temperature sterilizing—always clean and rust free.

No single type of heater can do all of these jobs well—the selection of the correct type from the full Sellers' line and Sellers' experience are required.



SEND FOR YOUR FREE COPY!

Before you buy *any water heater*— send your letterhead for this informative story on water and *how to heat it*. *It's free*— no salesman will call.

Sellers ENGINEERING CO.

4876 N. CLARK STREET CHICAGO, ILL.

Blast Heaters • Immersion Automatic Water Heaters • Combustion Units • Industrial Gas Burners
Vertical Steam Boilers • Immersion Tank Heaters • Gas Combustion Equipment

LETTERS

URBAN TRAFFIC FORUM

Sirs:

The report on your Urban Traffic Fo (AF, Feb. '53) is the most comprehen and enlightening of any article the writer reviewed on traffic, transportation and p ing. . . .

GUY T. MALLONEE
Executive secretary
Central Richmond Association,
Richmond, Va.

Sirs:

Congratulations on your presentation of urban traffic problem . . . it will arous great deal of interest. . . .

WM. R. MCCONOCHIE
De Leuw, Cather & Co., engin
Chicago, Ill.

Sirs:

. . . A very important statement on wh call the Downtown Renaissance. . . .

JAMES C. DOWNS JR.
Real Estate Research C
Chicago, Ill.

Sirs:

We have noted with great interest y excellent article on parking garages. . . .

J. E. JOHNSTON, *man*
Traffic Engineering Dep
American Automobile A
Washington, D. C.

Sirs:

. . . An excellent article and I was m impressed.

R. H. TATLOW III, *presi*
Abbott, Merkt & Co.
New York, N. Y.

Sirs:

Your articles on urban traffic and park garages are certainly among the finest thi ever done by any publication and are of valuable service to communities such as which are facing serious traffic and park problems. . . .

Thanks for your fine articles.

O. SMULIAN
The Froug Co.,
Tulsa, Okla.

Sirs:

Congratulations. . . .

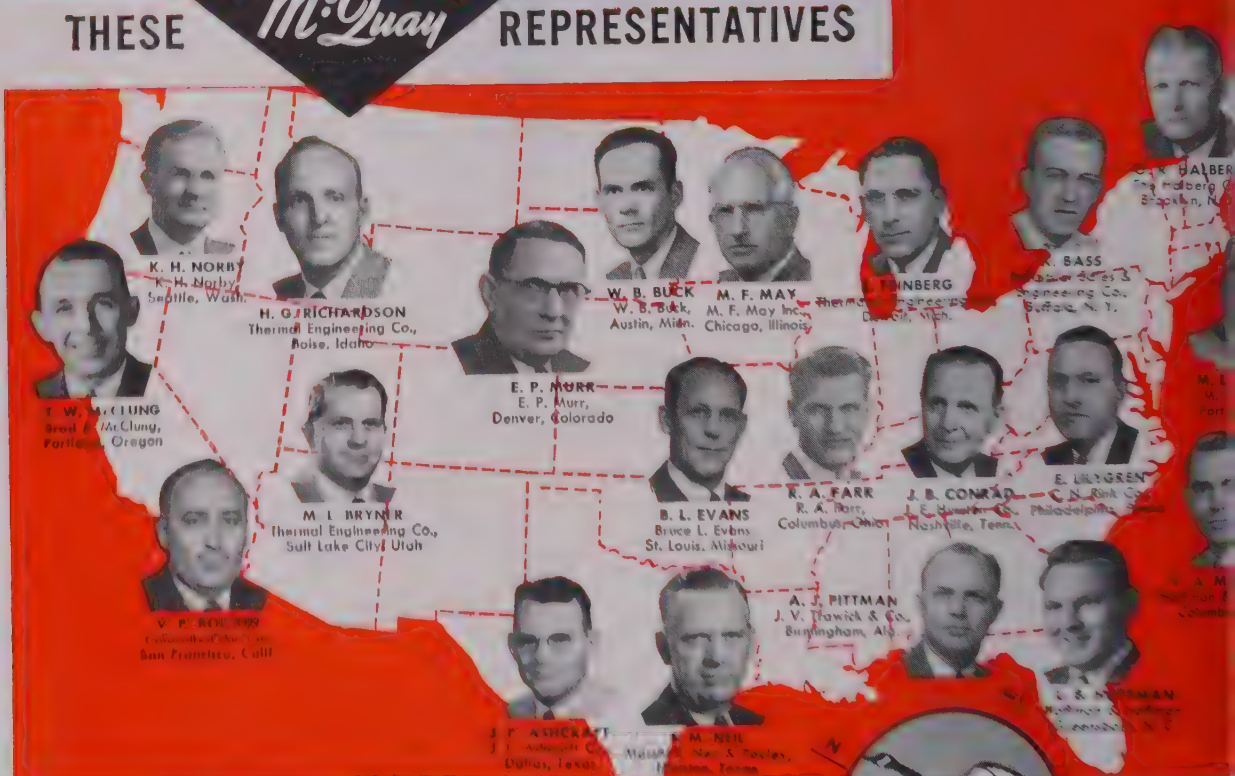
As medical director of the Service P ing Grounds, I undertook the study of parking and traffic problem, and find that FORUM has in big measure substantiated suggestions and recommendations whic advocated to many traffic and city offic and others who should have been interes in solving the traffic problem. Because selfish reasons—the parking income from meters—none of these recommendations put into effect.

continued on p


Solid Olsonite seat Numbers 5 and 10 were specially designed for industrial and commercial installations. Extra-heavy, one-piece construction eliminates joints, seams, and crevices—no weak spots to break or crack. Hinges are covered with matching Olsonite, leaving no exposed metal to rust or corrode. Model Numbers 5 and 10 are available in either white or black, for regular or elongated bowls.
NOT HOLLOW • NOT CONCAVE • NOT CORED... BUT SOLID
Olsonite
SWEDISH CRUCIBLE STEEL CO., Plastics Division
8561 BUTLER AVENUE • DETROIT 11, MICHIGAN
P-4

You can put full confidence in them

THESE McQuay REPRESENTATIVES



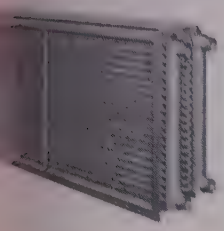
No. 3 of a series of 3 advertisements.

McQuay INC.

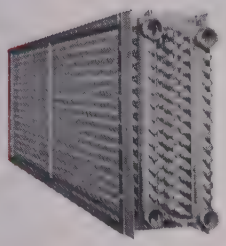
HEA
REFRIGERA
AIR CONDITIO

1609 Broadway St. N. E., Minneapolis 13, M

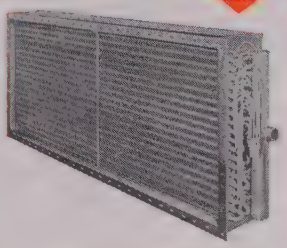
HIS COMPLETE LINE OF FAMOUS McQuay PRODUCTS



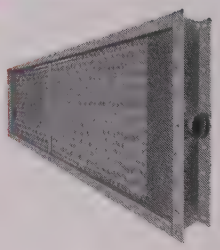
WATER COIL



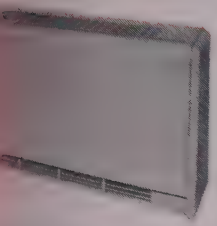
CLEANABLE TUBE WATER COIL



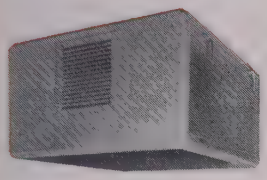
DIRECT EXPANSION COIL



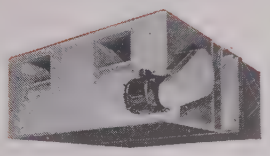
"BLAST" HEATING STEAM COIL



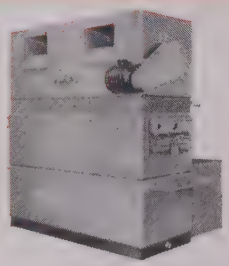
ASONMAKER (FLOOR)



"RH" AIR CONDITIONER



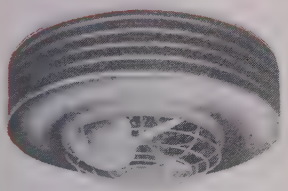
AIR CONDITIONER
(Suspended Model)



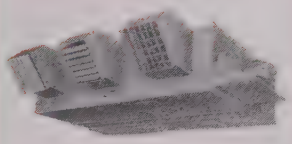
AIR CONDITIONER
(Floor Model)



RIZONTAL UNIT HEATER



DOWN FLOW UNIT HEATER

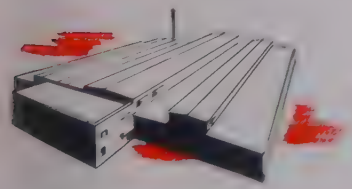


BLOWER TYPE UNIT HEATER
(Suspended Model)



BLOWER TYPE UNIT HEATER
(Floor Model)

McQuay representatives, in all principal cities throughout the United States, are qualified by long experience and training to help you satisfy all of your air conditioning and heating requirements. For cooperation in making the sale, technical advice, or getting the job done on time, consult the McQuay representative in your territory. Available to you through him is the complete line of McQuay products, featuring famous Ripple-Fin construction—a McQuay exclusive, assuring maximum heat transfer efficiency and dependable performance.



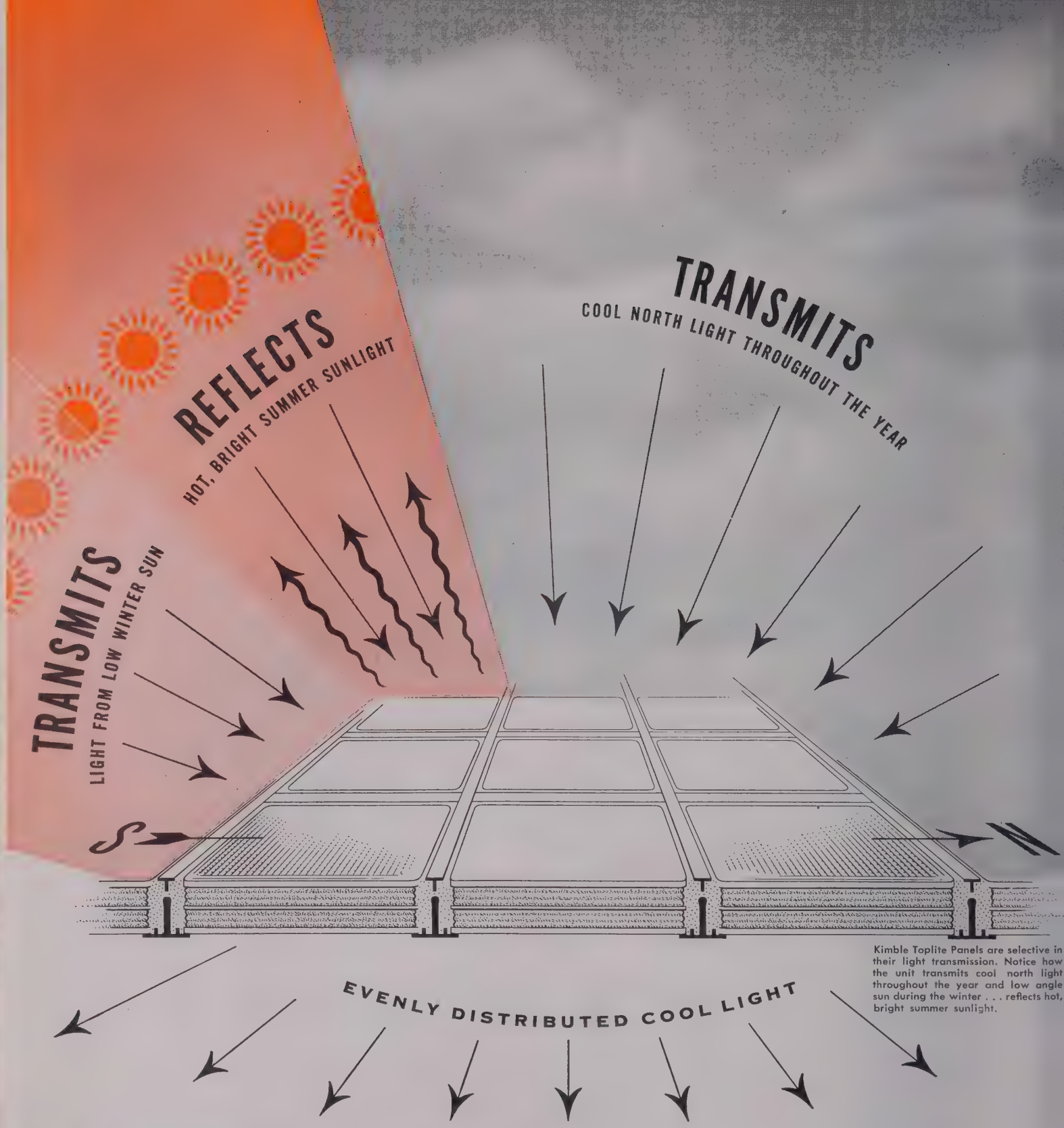
PLANT 1—1600 Broadway N. E.
MINNEAPOLIS 13, MINN.



PLANT 2—1729 Broadway N. E.
MINNEAPOLIS 13, MINN.



PLANT 3—4th and Park Ave.
FARIBAULT, MINN.



Kimble Toplite Panels are selective in their light transmission. Notice how the unit transmits cool north light throughout the year and low angle sun during the winter . . . reflects hot, bright summer sunlight.

ANNOUNCING TOPLITE—*a new idea in daylighting*

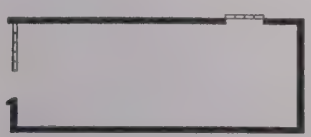
Kimble Toplite Panels limit and control the heat and amount of light entering a building from overhead.

Here is the new way to daylight deep interior areas too far removed to be effectively reached by conventional, side-wall, prismatic glass block panels.

Kimble Toplite Panels distribute diffused daylight evenly over wide areas that are far from outside walls. They reflect hot summer sun . . . have unusual ability to reduce solar heat transmission. There are no hot spots, eye-fatiguing glare, nor concentrations of light. Kimble Toplite Panel Units have an insulating value equivalent to double glazing or side-wall glass block.

• • •

Want more information about this great, new advance in daylighting? Write Insulux Glass Block Div., Kimble Glass Company, Dept. MB4, Box 1035, Toledo 1, Ohio.



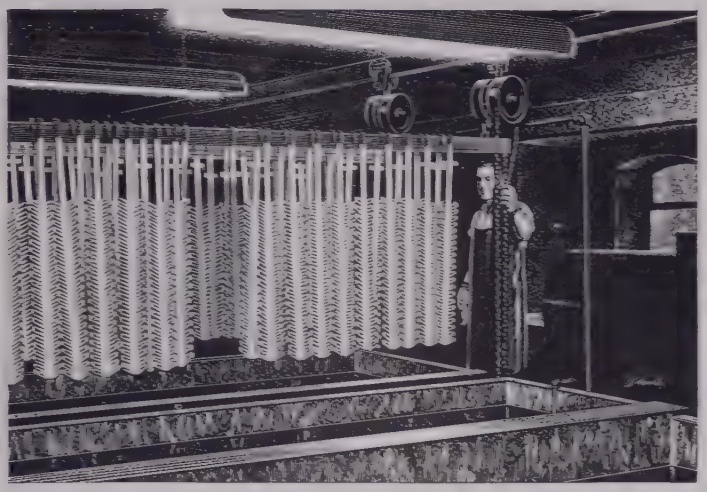
Kimble Toplite supplements Insulux Fenestration in deep rooms.

KIMBLE GLASS COMPANY

Toledo 1, Ohio—*Subsidiary of Owens-Illinois Glass Company*

Servel

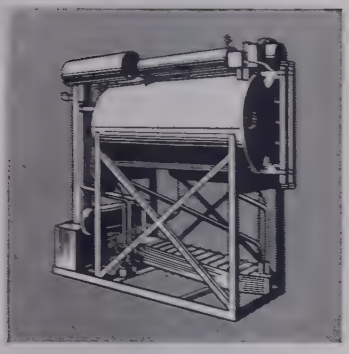
WELCOMES...and SOLVES



tough industrial cooling problems

When Colonial Alloys Company of Philadelphia decided to anodize aluminum products by the new and different Electrodizing Conservation or "EC" process, it faced the problem of maintaining proper temperature of the electrolytic bath solution.

To meet this essential requirement, Colonial Alloys chose a Servel 25-ton Water Chiller. Not only does this single Servel Air Conditioning unit maintain constant, controlled solution temperature, but it also provides office air conditioning, chilled water for experimental work, and cold drinking water.



The 25-ton Water Chiller used in the Servel installation at Colonial Alloys Company.

Colonial Alloys reports that the new "EC" process, in which Servel equipment plays such a leading part, has *increased aluminum anodizing production as much as five times, while cutting costs as much as 99%!*

This is one of many examples of how Servel Air Conditioning equipment benefits industry. Chances are, your problem can be solved in an equally satisfactory manner. Because Servel Air Conditioning *uses heat to produce cold,* operating economy is outstanding. It operates on gas, oil, steam or waste heat—whichever is the most economical fuel in your area. There are *no moving parts* to wear or cause vibration. And every Servel unit carries a complete *five-year warranty.*

★ ★ ★

Servel manufactures the world's finest air conditioning equipment to fit all air conditioning needs—residential, industrial, commercial—all-year or cooling alone. For complete information, clip and mail the coupon today.

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I want to know more about industrial uses of Servel Air Conditioning.

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Company Name_____

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WALLS

of Enduring Beauty

Maintenance-Free for Life



Regardless of the size or type of building, architects and builders want walls and top surfaces that are beautiful, durable, easy to maintain, low in cost and easy to install. Architects and builders from coast-to-coast are finding the perfect answer in LAMIDALL—the low-cost, ⅛" thick, structurally strong plastic laminate. Easy-to-handle 4'x8' and 4'x12' panels cut application costs to the bone. Beautiful, decorative colors and patterns and natural woodgrains blend with any room decoration.

LAMIDALL MATCHING MOULDINGS

For the beauty of continuous walls, Woodall provides Matching Mouldings of the same tough Lamidall, in exact Lamidall patterns and colors.

Write today for free Lamidall samples and full-color descriptive literature.

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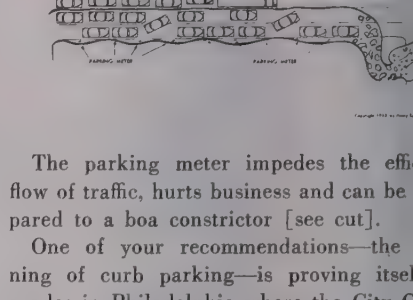
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LETTERS *continued*



The parking meter impedes the effi flow of traffic, hurts business and can be pared to a boa constrictor [see cut].

One of your recommendations—the ning of curb parking—is proving itsel spades in Philadelphia where the City C cil, on Feb. 26, made its holiday test on d town curb parking permanent.

Here mass transportation has been spe up amazingly—downtown business has sh a pronounced improvement—shop win enjoy maximum visibility and the incre use of mass transportation has relieved d town parking facilities so much that the ample space for all auto-parking shop

All this was accomplished immediately at no cost to the taxpayers. . . .

HENRY TURKEL,
Detroit, Mich.

Sirs:

Instead of the auto or bus, neithe which is a very pleasant part of the d town scene, how about a strictly urban vention to replace them both?

To emphasize that it is not a competit the family car, I'll call it the "Self-Prope Bus Seat," a single-passenger electric ve not more than half the length and widt a standard car. These will be rented stations located at convenient down points.

Now our old friend, the strap-hanger, ply walks to the nearest station, checks an SPBS (the first in line since they ar alike), and buzzes home. He returns it in morning, leaving the family car for the to use for suburban shopping.

During the day the same SPBS wil used for business errands, and its sle form, plus the absence of busses, will n economical use of the street even stan at the curb.

Here is a chance for private capital t duce congestion, improve the atmosp rescue the strap-hanger, and make s money. Step right up!

ALAN MC
Bishop, Ca

• To its next discussion of urban traffic, Fo will invite a representative of the amusement "dodge 'em car" business!—ED.

Sirs:

I have just read your most enlighte report on your Urban Traffic Forum, and impressed by the authoritative, intelli

continued on p



The exceptional resilience and rich appearance of Armstrong's Cork Tile make it an outstanding flooring choice wherever an atmosphere of quiet and dignity is desired. Extra strength and durability resulting from an exclusive dielectric process make lighter, less expensive gauges of Armstrong's Cork Tile practical for most needs.

Chapel
Oak Park Hospital, Oak Park, Illinois
Schmidt, Garden and Erikson, Architects

ARMSTRONG'S CORK TILE

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"Automatic" Sprinkler

10 point FIRE PROTECTION

Built-In Safety . . .

. . . FOR PROFITABLE SAVINGS!



"Automatic 400" Ceiling Sprinklers blend perfectly with even the most beautifully lighted and decorative interior.

Adequate fire protection is as important to the buildings you design, erect or manage as your physical well being is to yourself. You wouldn't think much of the doctor who diagnosed and prescribed treatment without first making a thorough examination. Similarly, fire protection equipment cannot provide complete safety unless it is scientifically designed and engineered, skillfully manufactured and installed, and adequately maintained.

"Automatic" Sprinkler 10-Point Fire Protection is a combination of all these safety features. It not only safeguards against fire under any condition . . . it actually produces income by reducing insurance rates. It's the profit-making service that saves money whether there's a fire or not—can save the business if there is!

Get The Facts: Write for informative 36-page booklet, "The ABC of Fire Protection." It's free!

"Automatic" Sprinkler



CORPORATION OF AMERICA · YOUNGSTOWN, OHIO

OFFICES IN PRINCIPAL CITIES OF NORTH AND SOUTH AMERICA

LETTERS *continued*

and comprehensive coverage of the traf problem.

Since an enlightened public is essential any program . . . I would appreciate yo sending me reprints to distribute to the loc planning commission.

RICHARD B. STRINGHA
Salt Lake City, Utah

Sirs:

. . . I was most interested. . . . I would li to obtain six reprints of this article for me bers of the Cambridge City Council.

EDWARD S. STIMPS
Stimpson Terminal
Cambridge, Mass.

Sirs:

. . . A most useful and practical discussio . . . Would it be possible to get two doz reprints of this section of the February issu

ERIC W. THRIFT
American Institute of Planners
Royal Architectural Institute of Cana
Winnipeg, Manitoba

Sirs:

. . . Please ship us 1,000 reprints.

M. M. TODD
Executive secretary
Institute of Traffic Engine
New Haven, Conn.

Sirs:

I am interested in 100 reprints. . . .

W. H. CHASE
Asst. vice president
The Ohio Bell Telephone C
Cleveland, Ohio

Sirs:

. . . We would like to have 1,000 prints. . . .

FRED A. OSSANNA, JR.
Director of research
Twin City Rapid Transit C
Minneapolis, Minn.

• Reprints are available—up to ten copies at cost; in quantities at $2 per hundred.—ED.

GARAGES

Sirs:

YOUR ARTICLE "NEW THINKING ON PARKI GARAGES" SUPERB. CAN REPRINTS BE OBTAIN AS I DESIRE TO HAVE SAME PUT IN HANDS OUR CITY FATHERS.

OTIS G. BRUN
Manager of propert
The Lurie Co.
San Francisco, Calif.

• The supply of reprints has been exhausted.—

Sirs:

In your February issue you published picture of a parking garage in Phoenix the Valley National Bank.

I acted as architect for this project. addition to moving the building to Portla

continued on p.



Offices— when and where you want them...

Johns-Manville Asbestos Movable Walls permit quick, economical space changes — provide modern, efficient offices!

YOU can rearrange your present space or have new space partitioned off quickly and economically with Johns-Manville Asbestos Movable Walls. There is little or no interruption of normal routine.

These flush-type, asbestos panels have a clean, smooth surface that's hard to mar, easy to maintain . . . and extra strong to withstand shock and abuse. Also, they are light in weight, easy to install and relocate. The "dry wall" method of erection assures little or no interruption to regular routine.

Johns-Manville Asbestos Movable Walls may be used as ceiling-high or free-standing partitions. The complete wall, including doors, glazing and hardware, is installed by Johns-Manville's own construction men under the strict supervision of trained J-M engineers . . . responsibility is undivided.

For details about Johns-Manville Asbestos Movable Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Dept. AF, New York 16, New York. In Canada, write 199 Bay Street, Toronto 1, Ontario.

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MOBILEX is a new idea in lighting—a recessed fluorescent lighting system designed especially for use with the newly developed grid-type suspended ceiling. MOBILEX is flexible. Use as single units . . . or create countless patterns of light. Available in 2′x2′ and 2′x4′ units.

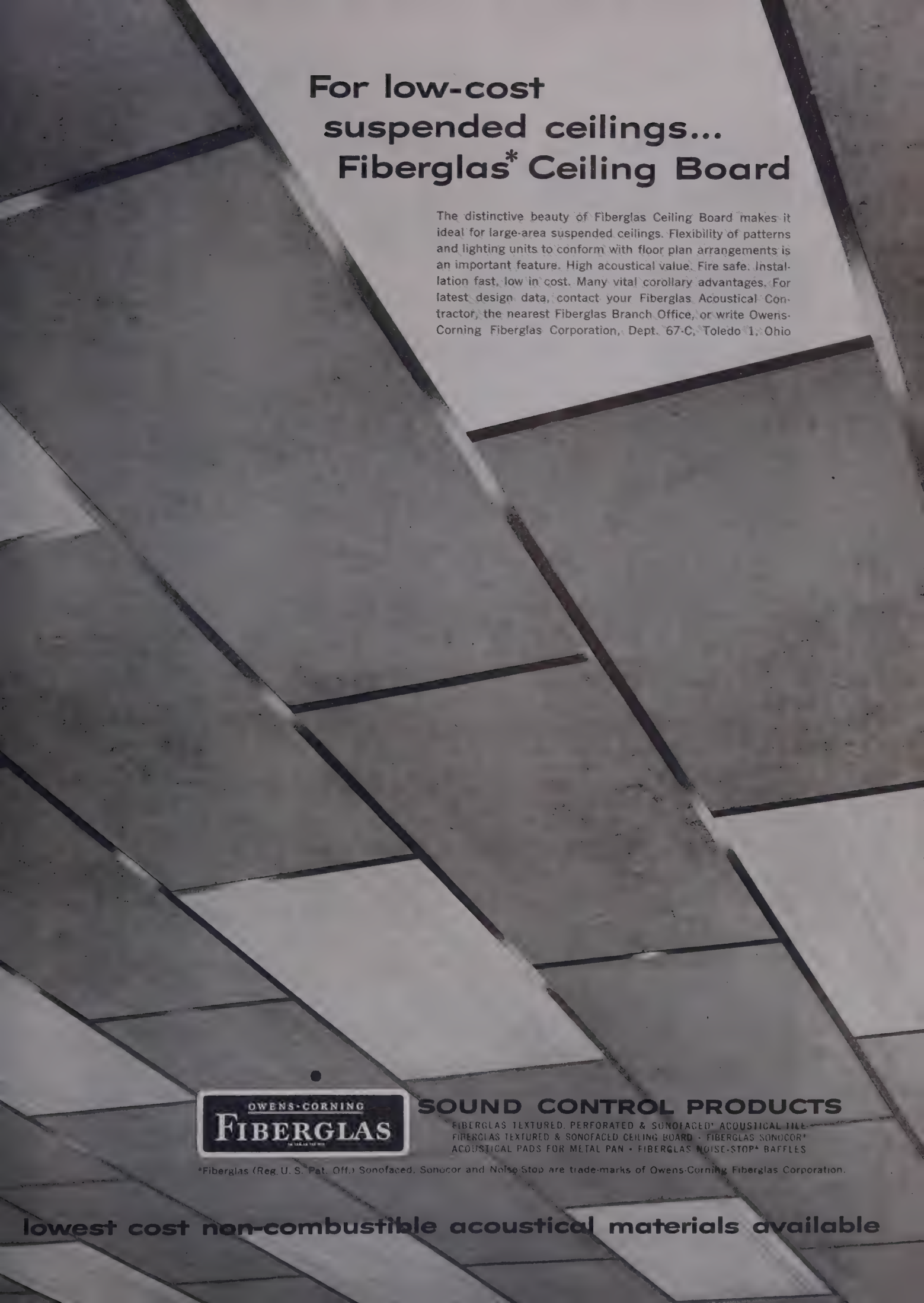
MOBILEX is easy to install. Insert fixture into grid opening and let it rest on grid rails. No hangers. No suspension straps. Saves up to 50% in installation time. Get the full MOBILEX story. Write today for Bulletin OD-567.

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Lighting Fixtures

Also available for use with other type ceilings.

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For low-cost suspended ceilings... Fiberglas* Ceiling Board

The distinctive beauty of Fiberglas Ceiling Board makes it ideal for large-area suspended ceilings. Flexibility of patterns and lighting units to conform with floor plan arrangements is an important feature. High acoustical value. Fire safe. Installation fast, low in cost. Many vital corollary advantages. For latest design data, contact your Fiberglas Acoustical Contractor, the nearest Fiberglas Branch Office, or write Owens-Corning Fiberglas Corporation, Dept. 67-C, Toledo 1, Ohio

OWENS-CORNING FIBERGLAS

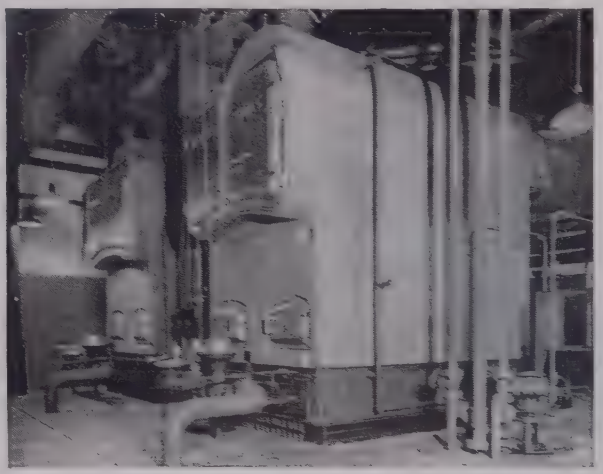
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*Fiberglas (Reg. U. S. Pat. Off.) Sonofaced, Sonocor and Noise-Stop are trade-marks of Owens-Corning Fiberglas Corporation.

lowest cost non-combustible acoustical materials available

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MORE MATERIAL
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KEWANEE-ROSS CORPORATION
Division of American Radiator & Standard Sanitary Corporation
KEWANEE, ILLINOIS



LETTERS *continued*

Ore., you gave credit to Leo and Var Sanders for the design. You also state th building of this type can be built for per car space. This job cost about $ per car space.

It may be of interest to you to know too much space is required for a car po make a deal of this kind practical on priced property. The Phoenix garage quires nine employees and operates only 7 A.M. to 6 P.M. during the day.

H. H. GREEN, *arc*
Phoenix, Ariz.

• FORUM apologizes to Reader Green for m his garage to Portland, for failing to credit as well as the garage company's designers for marking down the cost. However, si garages have been built without spandrel and other architectural treatment for as litt $400 a car. And similar garages have been in Portland.—ED.

• Incidentally, the article on garages faile note that National Garages Inc. were consul in the planning of the Richmond Garage (p. and the Detroit garage (p. 125).—ED.

3-D ARCHITECTURE

Sirs:

Thanks to FORUM and Saarinen [w cylindrical chapel and domed auditorium MIT were presented in the January iss Ed.] it is now safe to assume at least "graduate school of box-kite design" n abandon the box. Academicians have lon mired and imitated the Saarinens inasmu the technique could be more or less re duced. Although other architects have ago experimented with geometrical sh other than the box, it still takes a Saarin put across the idea.

Wright's triangles, hexagons, spirals, cles. etc., in three dimension have little e on others and the influence is dismissed "But he's a genius!" Similar treatmen given a few others who have thought in t dimensions.

I have no fault to find with Saarinen cept for his imitators. (I wonder how m competition prizes have been awarded cause the jury felt the project was e Saarinen or close enough to be noncon versial.)

Now that new geometrical forms are to explore, what will happen to design in universities and architectural offices? At last can we look forward to individual pression, now an heinous crime? Will th ing in the "round" take over the assem line-plan factory box cursed with the l clichés?

Thanks to FORUM and Saarinen for ope the way to a new freedom.

MYRON M. KEHNE, *arc*
St. Paul, Minn.

continued on

Brand new!



DUSKLITE

. . . a special glass for vision strips used with PC Glass Block panels

Most everyone agrees that panels of PC Functional Glass Blocks provide the ultimate in natural lighting for schools, offices and other types of buildings. It has been common practice for many architects to use them in combination with clear-glazed vision areas because people usually want to see out. But shading devices commonly used to overcome the high brightness levels through these areas blocked the very vision the architect was trying to provide.

Now, however, Dusklite, a completely new laminated safety glass developed and manufactured by Pittsburgh Plate Glass Company, provides the brightness control needed for these areas *without* blocking the vision. Thus, the need for expensive, high-maintenance blinds, shades or louvers is eliminated.

Dusklite is neutral grey with a visible light transmittance of about 25%. It is available in 7/32" thickness and in sizes up to 15 square feet. Color perception through it is excellent.

If you send the coupon, we'll be glad to tell you how PC Glass Block panels combined with Dusklite vision strips can improve daylighting and save money.

Pittsburgh Corning Corporation

PITTSBURGH 22, PA.

PITTSBURGH PC CORNING

Pittsburgh Corning Corporation
Dept. E-43, Pittsburgh 22, Pa.

Please tell me more about Dusklite and its use with PC Functional Glass Block Panels.

Name Title

Firm

Address

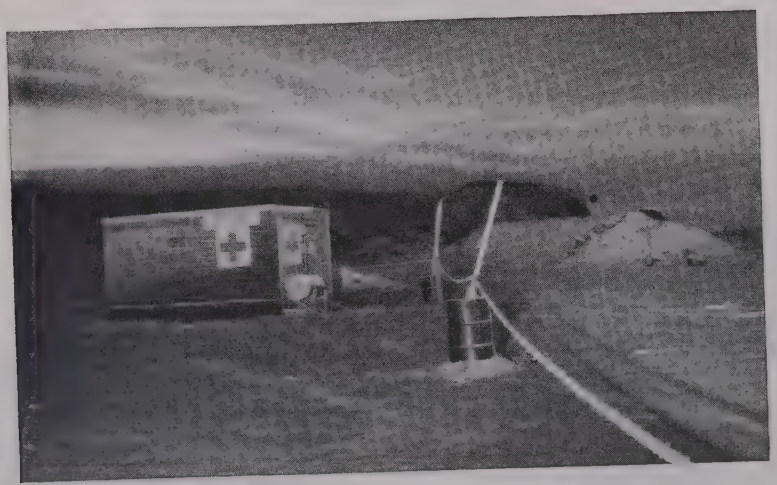
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VULCATEX (L.T

OUT COLD ON OPERATION

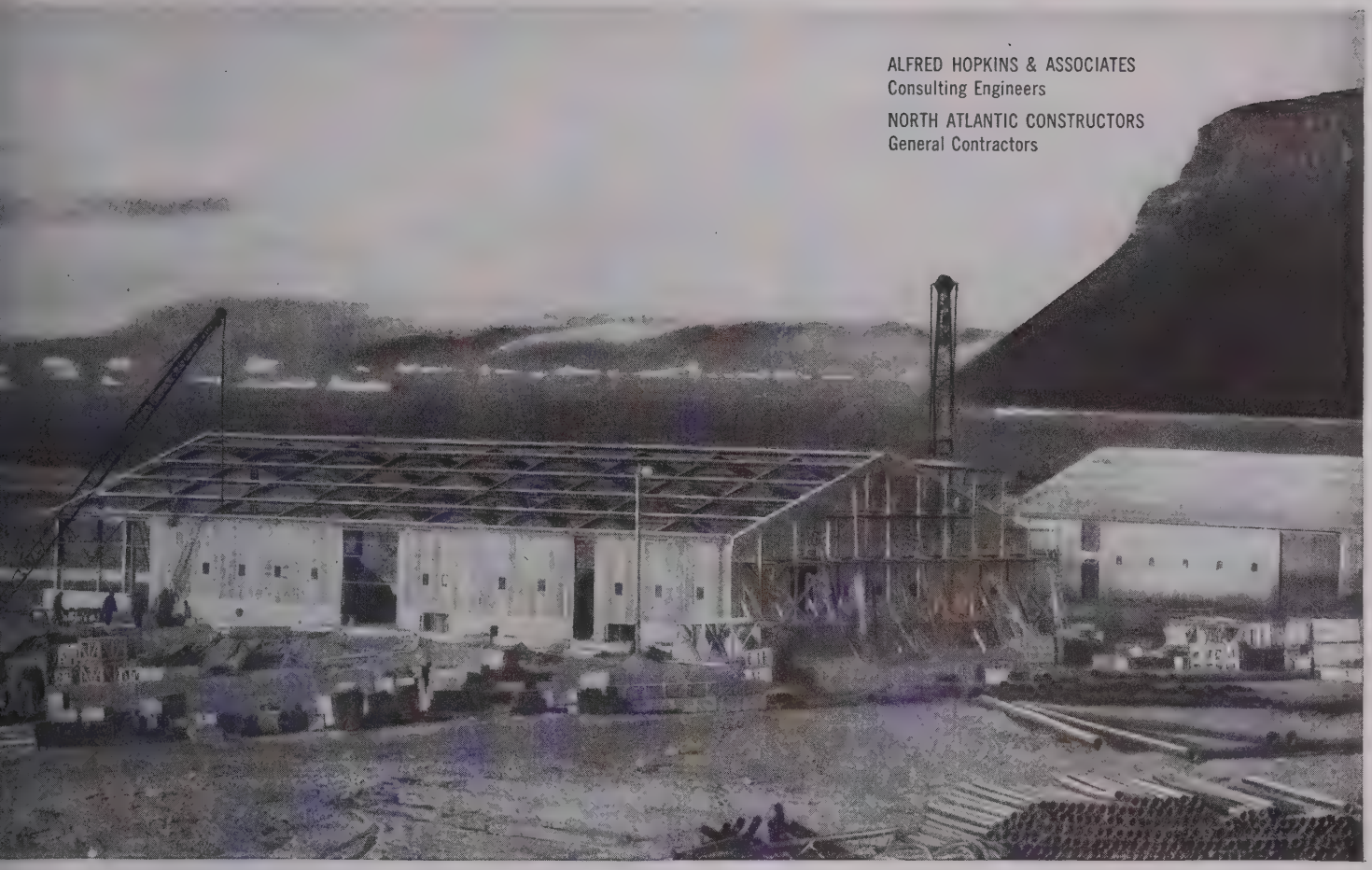
60 DEGREES BELOW ZERO



Through the announcement of the Defense department the public knows about operation "Blue Jay" only 900 miles from the North P This modern engineering miracle is a full scale year round bomber b Temperatures of minus 60° F are common and winds drive rain or s against the structures at 150 miles per hour. In such cold even ru and steel become brittle.

The A. C. Horn Company Inc. has the honor of having supplied 40,000 gallons of its special low temperature Vulcatex Elastic Cau Compound. This was used in the joints and between the panels o many pre-fabricated structures for water-tight, air-tight seals.

Operation "Blue Jay" in spite of the inhuman cold is now desc



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AULKING COMPOUND KEEPS BLUE JAY," GREENLAND, AT

ug" and the workers and service men enjoy better than normal . Vulcatex (L.T.) Caulking Compound keeps the heat in and the cold out. Thousands of other important buildings in the United and throughout the world are also protected by Vulcatex in every e and type of structure.

ex, a product of the Horn Research Laboratories, has outstand- operties of plasticity, adhesion and long life. Many applications over 20 years old are still completely effective. You can rely on the performance of any Horn product. This has been true for 56 years.



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AF-53

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Will the floors you specify today speak well of you for years to come?

This flooring will be a prestige builder for you twenty years from now. It will continue to confirm your good professional reputation.

For in twenty years this floor of Wright Rubber Tile will still be new-looking, lustrous, and beautiful. The unsurpassed durability of Wright Rubber Tile flooring has been proven again and again in residential, commercial, and industrial use. Many Wright floors laid thirty years ago show virtually no sign of wear to this day.

This is the miracle flooring you've been hearing about. Being non-porous, it repels dirt, requiring less maintenance than any other floor. Being highly resilient, it resists damage and absorbs sound. Being uniform in color and quality from top to bottom, Wright Rubber Tile can't "walk off" and so stays smooth and beautiful throughout its long life.

You can specify Wright Rubber Tile flooring with the assurance of lasting beauty. You can be sure, further, that no one will ever say of this floor, "The architect should have known better."

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FLOORS OF DISTINCTION

- WRIGHTEX—Soft Rubber Tile
- WRIGHTFLOR—Hard Surface Rubber Tile
- WRIGHT-ON-TOP Compression Cove Base

LETTERS *continued*

BREUER'S ARTS CENTER

Sirs:

Before making any criticism of your let me say I enjoyed your December particularly the section on churches and excellent story and pictures on the Lloyd Wright church in Madison, Wis. I enjoyed and agreed with you in points in your article, "Anarchy in Churches." Also I agreed with your in sion that each well-known architect see continue to progress along his own with no unity of ideas as a style typifyin time. To the student and layman the variance in ideas and design theory mu confusing.

But I think there are times when too credit is given to famous men. Too the supposed innovations that these fa men make are not detected as old idea

In your article on the Marcel Breuer torium you speak of the "pet notion h held for 20 years: A lighting gallery lo above the auditorium at about mid-c From this gallery, the student-operators see the effects they are producing just a audience sees them." This idea is more 20 years old, and while it may be a pet of Mr. Breuer's, it could not be original him except by coincidence. Read the *ter of Today* written by Moderwell; th teresting book I read as far back as 191

Neither is the use of hydraulic lift the forestage new. There are many the today which have such devices as for or tra pit and fore stage.

I do not mean to discredit the good jo Breuer has done. The use of good ide a credit to him. However, originality always be hard to prove.

R. C. SANDBERG, *arc*
Rock Island, Ill.

Sirs:

The lessons Mr. Breuer learned at the haus have enabled him to execute no works of recent years. But the repetiti these lessons without the advancemer esthetic concept have, I believe, contril to the sterility of the Sarah Lawrence Th Arts Center. (AF, Dec. '52).

Mr. Breuer's plan arrangement and vations are "a highly ingenious architec achievement."

However, the weak use of textures and of spirit in the treatment of the eleva lead me to believe that Mr. Breuer has spending too much time with Mr. Gropi Harvard.

I compliment Mr. Breuer on his effor Paris and hope that future projects have vitality of the UNESCO building (AF, '52).

E. ABRABEN, *des*
Fort Lauderdale,

continued on p

Now you see it . . . Now you don't . . .

One minute a modern, compact kitchen . . . the next, a dining room with a graceful, folding backdrop. Magic? No. Just another use for "Modernfold" doors.
Architect F. J. Hinton designed the Martinique Apartments for Forman Construction Company of Milwaukee (1) to make every inch of floor space count, and (2) to do it beautifully. To get one door to do both jobs, he specified "Modernfold"—the original, space-saving folding door.





Your ideas come to life . . . for life with "MODERNFOLD" doors

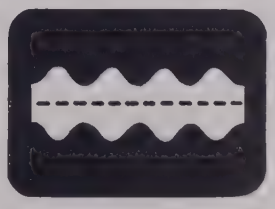
You're sure to keep clients happy when you specify "Modernfold"—the original folding door. Why? Because no other folding door *anywhere* equals "Modernfold" for quality of design . . . for quality and strength of materials.

Your clients will like space-saving "Modernfold" doors because they last longer, look better, operate easier. You'll like specifying "Modernfold"—because the line is so complete. You can get exactly what you need in a "Modernfold" door for every closure or space division problem.

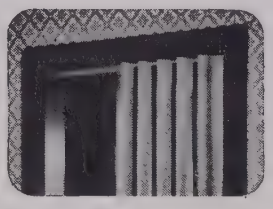
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NEW CASTLE PRODUCTS, NEW CASTLE, INDIANA

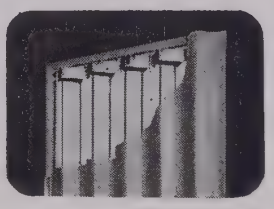
In Canada:
Modernfold Doors, 1315 Greene Avenue, Montreal



Only "MODERNFOLD" Doors *have center-line design—the same* number, *same* type, *same* size *hinges . . . both top and bottom . . . on* both sides *of the track.*

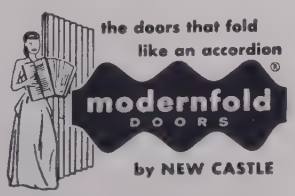


Better Looking *Fabric covering completely conceals all operating mechanism—no cornice needed to hide track, trolleys and hinges.*



Longer Lasting *"Modernfold" doors have* more *steel hinges both at top and bottom; more steel in each hinge;* more *vertical steel rods.*

YOU CAN'T GET MORE IN A FOLDING DOOR



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Box 507
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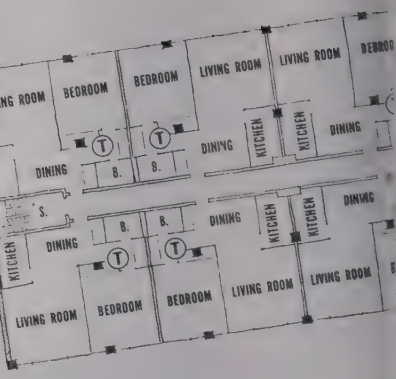
Gentlemen:
Please send me full details on "Modernfold" doors.

Name.....

Address.....

City.....*County*.....*State*.....





TYPICAL FLOOR PLAN

Architects and engineers for Chicago's 2933 Sheridan Road Apartments were Pace Associates, Chicago. Management of the building is handled by Benjamin E. Sherman & Son, Chicago.



How Honeywell Customized Temperature Control can help you solve a real problem in every apartment building you design

Special system keeps all tenants comfortable all the time, cuts fuel costs

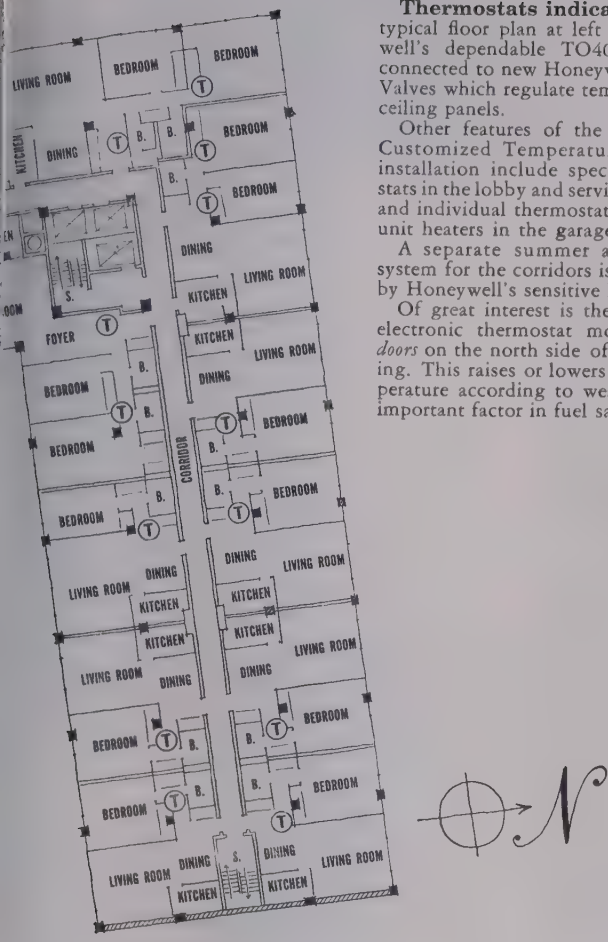
What can you do to keep tenants from opening windows (thus wasting costly heat) when they think their apartment's overheated? How do you answer a tenant's complaint that "It's too cold up here" when his apartment is far from the boiler? Or for that matter, just how do you satisfy the people who like it 76° and those who insist on 68°—in the same building?

Ever since the first apartment was built, owners and managers have been plagued by such questions. But they need no longer worry.

The way these problems are being met—by Honeywell Customized Temperature Control—in the 2933 Sheridan Road Apartments in Chicago shows why. This installation provides separate thermostats for every apartment—so tenants can select the temperature *they* want.

Here's what a couple of people intimately acquainted with the 2933 Sheridan Road Honeywell Customized Temperature Control installation have to say: *Tenant* Lee H. Kulp says, "Our rooms are always comfortably warm—but never hot or stuffy. My wife is delighted."

L. H. Sherman, *management associate*, says, "All our tenants find the system very satisfactory. As owners and agents we're especially pleased with the economical fuel consumption."



Thermostats indicated on the typical floor plan at left are Honeywell's dependable TO400. They're connected to new Honeywell Midget Valves which regulate temperature of ceiling panels.

Other features of the Honeywell Customized Temperature Control installation include special thermostats in the lobby and service vestibule and individual thermostats to control unit heaters in the garage area.

A separate summer air cooling system for the corridors is controlled by Honeywell's sensitive LO900.

Of great interest is the use of an electronic thermostat mounted *outdoors* on the north side of the building. This raises or lowers water temperature according to weather, is an important factor in fuel saving.

For comfortable, even temperature in new or existing buildings—of any size—use Honeywell Customized Temperature Control

Whether it's an apartment, church, school, office, factory, hospital, store, garage—or any size building—new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems.

Once equipped with Honeywell Customized Temperature Control, they'll have an ideal indoor "climate"—and save fuel besides.

And with a complete line of pneumatic, electric and electronic controls to choose from, Honeywell Customized Temperature Control offers you the greatest flexibility in design. Then, too, when it comes to performance, Honeywell-built controls assure years of trouble-free operation. And they're backed by the finest service organization in the controls industry.

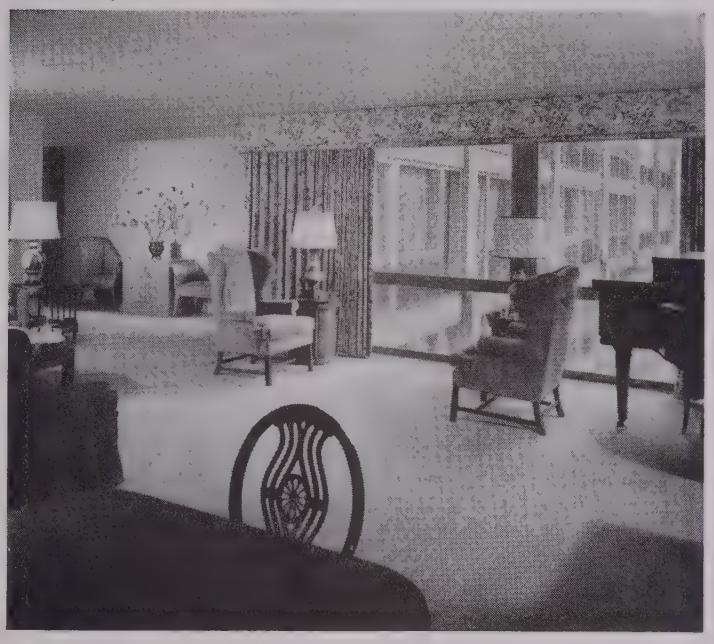
For full facts on Honeywell Customized Temperature Control, call your local Honeywell office. There are 104 across the nation. Or mail the coupon today.

MINNEAPOLIS **Honeywell**

First in Controls



One thermostat furnishes ideal comfort in smaller apartments. Tenants can regulate to comfort level *they* prefer, get compensating effects of individual thermostat against cold north winds or warm winter sun—depending on exposure and window area of apartment.



Two thermostats in larger apartments such as this give tenants zoned comfort, save additional fuel for management. Many tenants keep bedroom zone thermostat turned back for cool sleeping. Manager normally turns back both thermostats when tenants leave for cold-weather vacations—thus saving considerable fuel.

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. MB-4-79, Minneapolis 8, Minnesota
Gentlemen:

I'm interested in learning more about Honeywell Customized Temperature Control.

Name

Firm Name

Address

City *Zone* *State*

DRAWINGS — SPECIFICATIONS — CHARTS

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LETTERS *continued*

HARMONY BY CONTRAST

Sirs:

The article on church building was beau fully presented in your December issue.

The disturbing part was the story regardi Ernest Born's design for a chapel. The truste of the Pacific School of Religion in Berkel unfortunately appear to be very short-sighte They possess little respect for their own jud ment in commissioning the architect to prepa studies. With less than one hour's study a evaluation, a snap decision was made again the designs which undoubtedly cost Bo months of thought and effort. He went beyo the circumscribed boundary of the commissi to develop an intelligent architectural expr sion, by integrating the existing unrelat structures with future developments.

Any attempt to match the existing stru tures would have been a sign of mental a moral weakness. Most churches erected tod are cheap imitations of better, earlier e amples.

The trustees apparently do not realize th churches are not built to sell and therefo should not be fitted to market conditions, h should be in the forefront of progressive ide and construction, and thereby contribute the communities they serve.

FRANCIS JOSEPH MCCARTHY, *archite San Francisco, Calif.*

Sirs:

Your defense of Ernest Born's performan in this Pacific School of Religion church bu ness at once reminded me of your defense Harrison's performance at the UN, and, golly, I read down through the article an sure enough, you mentioned the similarity.

Good for the trustees. I hope they stick their guns. Not that I don't admire Born work, not that I don't think this is a goo fresh design, well presented. But is it the *on* one, or the *best* one?

Is the Piazza San Marco the only inspi tion for the architect in this case? Is a squa of this type with a campanile shooting busi up out of the middle the *only* atmosphere f a school of religion?

If the church is too small for the rest the group, why not attach the tower to it, a bring it up forward in the view of the spect tor, thus solving the problem of making it t dominant element, also saving money. W face the windows east and west and then ha to put on expensive louvers and porches? W not north and south, as in accompanyi sketch plan and perspective? With the chur in the front, a quiet and reposeful cloist garden could be in the rear with perhaps pool, not a vertical tower shooting up like skyrocket right out of the center. A cover walk could link the buildings.

Perhaps all this wouldn't produce a Piaz San Marco atmosphere, perhaps postcard ve dors and such wouldn't feel so much at hon

continued on p. 1



RUSCO Sets The Modern Pattern In Fenestration

Complete, Pre-Assembled Units — Fitted, Glazed and Finish-Painted — Make Big Savings in Installation Time and Cost . . .

Here is the window the whole building industry is talking about—the first truly *complete* window treatment. Proved through thousands of installations in the United States, Canada and Alaska, the Rusco Prime Window offers many unusual advantages. Made of tubular galvanized steel, bonderized and finished with baked-on outdoor enamel it is strong and rigid, yet streamlined and light in weight. Because it is fully pre-assembled, glazed and finish-painted—all ready to install in the window opening—it makes substantial savings in installation time and labor and in maintenance. Removable sash offers many conveniences and saves breakage during construction.

Rusco Offers You Important Features Not Found in Any Other Window!

GLASS... + *SCREEN...* (OPTIONAL) + *WATERPROOFED FELT WEATHERSTRIPPING...* + *INSULATING SASH...* (OPTIONAL) → *FULLY ASSEMBLED IN METAL OR WOOD SURROUND...*



Sliding glass and screen panels removable from the inside. A great convenience during construction—also simplifies window cleaning

Use of insulating sash aids in efficient air conditioning—permits no-draft ventilation where desired

All Rusco Windows have movable panels to allow ventilation

Joined in series by mullions, Rusco Prime Windows make full "glass wall" construction simple, inexpensive

Rusco Windows have no troublesome sash cords, weights or balances—raise and lower smoothly in felt-lined slides

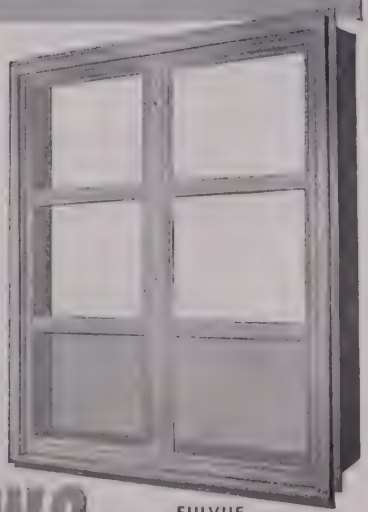
ALL COMPLETE, READY-TO-INSTALL UNITS

HORIZONTAL SLIDE





VERTICAL SLIDE

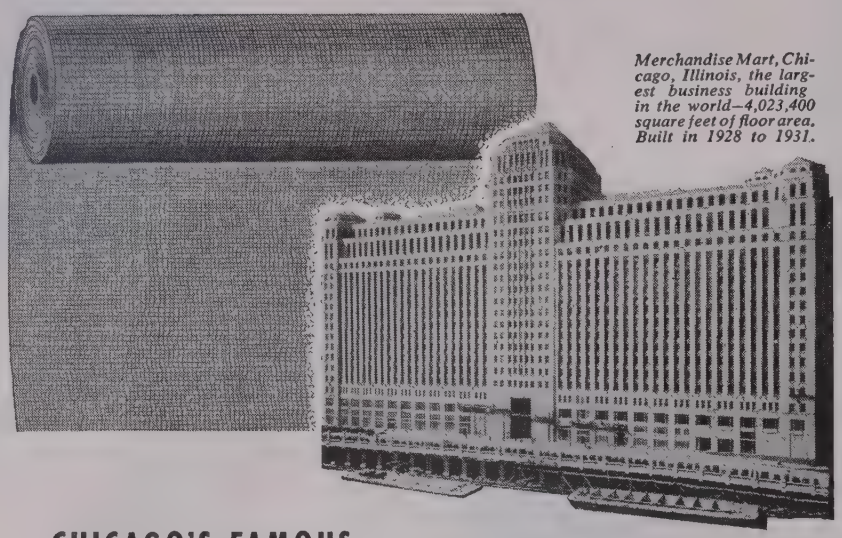


FULVUE
(Vertical Slide)

"ALWAYS ONE STEP AHEAD OF THE WEATHER WITH RUSCO"

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IN CANADA: TORONTO 13, ONTARIO

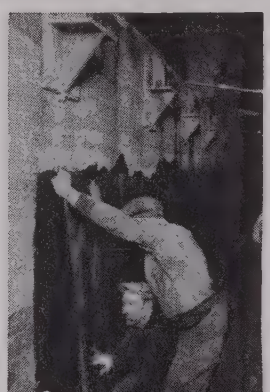


Merchandise Mart, Chicago, Illinois, the largest business building in the world—4,023,400 square feet of floor area. Built in 1928 to 1931.

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WATERPROOFING PRODUCTS



Karnak fabric is packed in sturdy, corrugated cartons for protected shipping and storage. They keep the fabric in perfect condition until used . . . cut fabric loss.

Twenty-five years ago, the problem of protecting the foundation of the "Mart" from hydrostatic head was answered with *Karnak*. Even though the big Chicago River flows beside it, *this Karnak job holds secure.*

Why was *Karnak* chosen? Because it is the membrane system of waterproofing *that holds tight against any water condition.*

Karnak is an open mesh long-fibre cotton cloth that has been heavily impregnated with highly refined asphalt *so as to leave the mesh open.* It is layered, on the job, with alternate moppings of asphalt to *provide a tough, resilient, waterproof membrane.* The non-sticking fabric unrolls easily . . . to the very end. It "works" faster and with no waste . . . saves labor costs.

The *Karnak* Membrane System is best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels. Send coupon for complete information. Manufactured by Lewis Asphalt Engineering Corp., 30 Church Street, New York 7, N. Y.

SEE OUR CATALOG IN SWEETS FILE

OTHER KARNAK PRODUCTS

Asphalt Roof Coatings and Cements	Asphalt Emulsions Tile Cement	Aluminum Roof Coating Wood Block Mastic
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LEWIS ASPHALT ENGINEERING CORP.

30 Church St., New York 7, N. Y.

Please send me ***FREE*** information about KARNAK Membrane System of Waterproofing

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ADDRESS_____

CITY_____ ZONE_____ STATE_____

*Other items I'd like to know about*_____

in it, but perhaps it might be a more appr
priate atmosphere for a school of religio
Sure it's traditional to have the church up
front and the cloister in back, but is that a b
layout, simply because it's been done befor
I also question whether a sloping roof
church would have been more expensive.

Your other churches were very good a
interesting. I wonder whether it is so bad
have a lot of different kinds of churches bei
built. I think it's stimulating.

I only wish you would quit looking so ha
for something "different" to praise in yo
magazine, such as the UN or this churc
Surely there must be lots of sound, yet ima
native, work going on to lavish your prai
upon.

ALSON CLARK
Pasadena, Ca

Sirs:

As a resident of North Berkeley, I am eag
to have a civic pride in all its structures.
would be a wonderful thing for our commun
if the chapel for the Pacific School of Rel
ion, as designed by Ernest Born, would
built. This design is truly inspired and
serves careful consideration by those in charg

A wealth of knowledge was poured into th
design and it has thoughtful beauty. I regr
if a committee leadership, which appears
see its own limited world, prevents its co
struction. In this case, it is doubly to be
gretted for the attitude has seemed to deme
the spiritual quality which we like to thi
rests in our churches.

WILLIAM W. WURSTER, *de*
School of Architecture
University of California

Sirs:

Every architect dedicated to the contemp
rary approach has a decision to face when ac
ing to an existing building group—harmoni
by extending the old—or "harmony by co
trast." In this case I feel Ernest Born wise
chose the latter.

His design has my wholehearted admiratio
He has proposed the kind of solution the mo
intelligent European practitioners have fr
quently used. For example, new shops in Pa
and in pre war Berlin contrast completely wi
the richly traditional buildings which conta
them and whose ancient facades are u
changed above the ground floor. It is a pity h
clients did not see that careful perusal of h
thoughtful work was to their advantage. It
no disparagement of them to say that they m
well have to be educated up to what seems
startling proposal.

Ernest Born has good authority for his po
tion. It was Goethe, I believe, who said t
artist must create what the public ought
like—not what it does like.

HERVEY PARKE CLARK
Park & Beuttler, architec
San Francisco, Calif.

Announcing

MULT-A-FRAME

World's only fully-locking steel framing material . . . by Ainsworth!

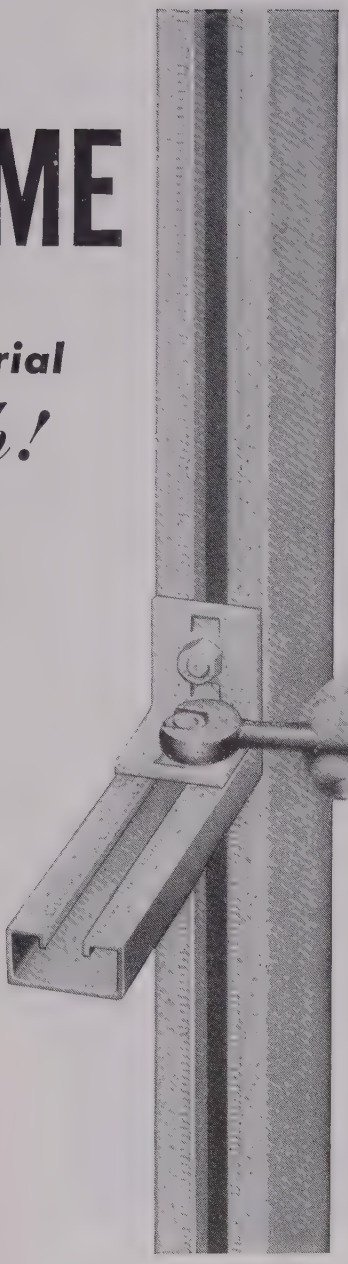
MULT-A-FRAME, amazing new fully-locking steel framing material with 1000 and ONE uses, lets you frame, hang or support anything faster, easier, at low cost!

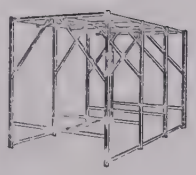
No welding, drilling, special tools or skills are needed. **MULT-A-FRAME** saves planning time, floor space, man-hours, insurance costs in every field . . . assembles and reassembles by standard hand wrench.

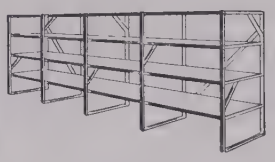
Get skyscraper strength without bulk for racks, supports, scaffolds, platforms, hangers, inserts, rigs, cribs, mobile parts carriers, etc. No scrapping . . . **MULT-A-FRAME** can be used over and over again. A wide variety of fittings is available to fit any job.

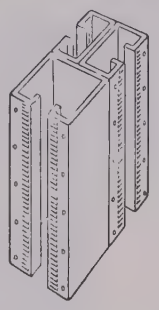
See how **MULT-A-FRAME** can answer your needs. Authorized distributors in principal cities provide engineering service and prompt delivery from warehouse stocks. Write, wire or phone now for FREE samples and catalog, *Dept. 109, MULT-A-FRAME DIVISION, Ainsworth Manufacturing Corporation, 2200 Franklin Street, Detroit 7, Michigan.*





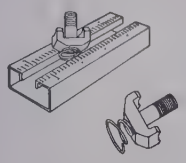






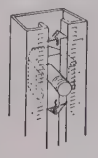
(Above) One of many welded combinations—available in Standard and Heavy-Duty Channel Frames for every purpose.

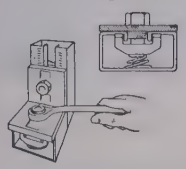
3 basic parts . . . 3 easy steps



1. Push Spring-T-Bolt into Channel Frame slot anywhere along frame. Give it a one-quarter turn. Long bolt stem easily held.

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MULT-A-FRAME

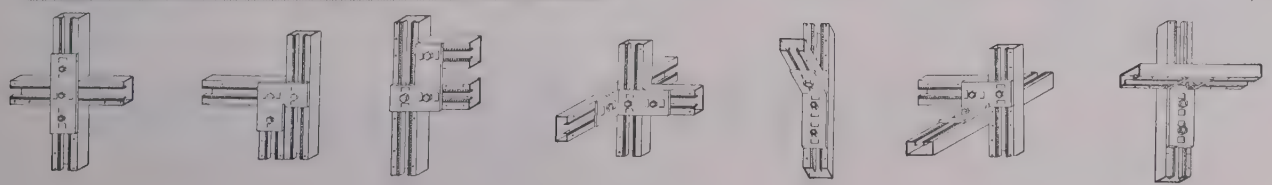
*Trade-mark. Patents Pending.

HOME OF MULT-A-FRAME

MULT-A-FRAME DIVISION

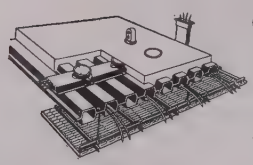
2200 Franklin Street, Detroit 7, Michigan

Ainsworth Manufacturing Corporation



Three G-E Wiring Systems that help keep buildings modern

Here are three examples of modern G-E wiring systems for the Construction Industry. They add exceptional utility—and sales appeal—to the structures in which they are installed.



Q-Floor wiring system.

This unique G-E wiring system uses the cells in Q-Floor steel floors for electrical raceways. No matter how changing tenants alter floor layouts, it will always be a simple matter to provide neat, unobtrusive electrical outlets for office machines, telephones, inter-office communication systems. One outlet is possible for each square foot of office space. The booklet "Your Stake in Q-Floor Wiring" gives full information.



Lever House, New York City, uses the G-E Q-Floor wiring system.





Remote-control wiring system.

Control of 9 circuits from one location is one of many interesting features of General Electric's low-voltage remote-control wiring system. Home buyers like the extra safety and convenience it offers. Builders like the way it helps sell homes. The booklet "Remote-Control Wiring System" gives full information.

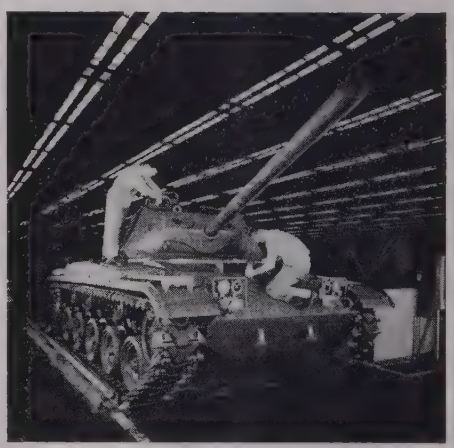
Builder Romeo S. Picerne, Providence, R. I., installed G-E remote-control wiring in these homes.



Interlocked armor cable system.

In the 440- to 15,000-v range, this remarkable cable permits factory management to wire or rewire their plants in less time, for less cost than with the usual raceway system. The system is permanent, for installation inside or out—yet with comparatively slight expense, it can be moved, expanded, or altered to fit every power need. Interlocked armor cable adds more value than it costs wherever it is installed. The booklet "Interlocked Armor Cable" gives full information.

For the booklets you want, write Section K7-44, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.



Midwestern tank plant rewired with varnished-cambric-insulated interlocked armor cable system.

You can put your confidence in—

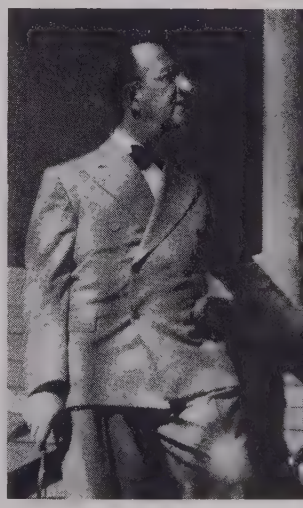
GENERAL ELECTRIC



Hans J. Schiller

Three new synagogues show today's techniques and materials embodied in the plastic architecture of

ERIC MENDELSOHN



The pioneering character of Eric Mendelsohn's architecture was well established when he came to the US 12 years ago. But in the long, self-imposed silence that followed, many began to overlook the unique character of his contribution.

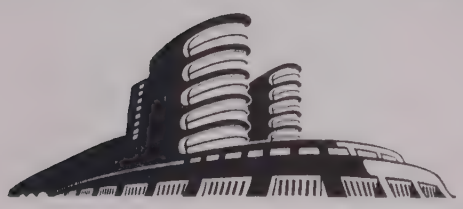
Among the three synagogues which FORUM is privileged to publish herewith, the St. Louis building is the first of the structures Mendelsohn has finished during those 12 years and it is now presented architecturally for the first time. In it and in his latest projects can be discerned afresh that ideal of "plastic continuity" which Mendelsohn himself describes as his lifelong aim in his notes on background and philosophy that follow.



sketch for an exhibition hall



sketch for a motorcar chassis factory



sketch for an optical factory



sketch: Bach, Toccata in C Major

BACKGROUND TO DESIGN

by ERIC MENDELSO

As a student in Munich in 1907 I rebelled against the then prevalent teaching of historical styles because I recognized that the elastic qualities of the new structural materials, steel and reinforced concrete, must by necessity produce an architecture entirely different from anything known before.

When my early sketches of this idea were exhibited in Berlin just after the first World War under the title "Architecture in Steel and Reinforecd Concrete," they were derided as mere book illustrations having nothing to do with architecture. However, my first building (the Einstein Tower) which had been conceived in the trenches under the impact of the war and Einstein's theory—both happenings forboding great changes—tried to express my idea in form rather than in structure.

The first accomplished facts of a creative resurgence then were three: the *structural potential* of steel as shown in the Hall of Machines (Paris, 1889); the *form potential* of Van de Velde's work at the Dresden Exposition (1906) which expressed his ideas in forceful lines rather than in lines of force, and which his followers degraded into the marketable excrescence known now as "Art Nouveau"; and the *tectonic potential* (i.e., the integration of material, construction, and form) of the Railway Station built in Hamburg in 1910. But their importance was set aside by the demands of a rapidly expanding industrialization and mechanization, a development which, seen in retrospect, was unavoidable.

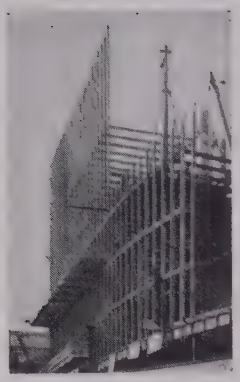
And so it came that the new materials were first exploited for skeleton constructions, repeating post and lintel to make multistory commercial buildings structurally and economically feasible. This structural and intellectual expediency enlisted, with very few exceptions, a whole generation of architects in the service of the building boom and the unimaginative exuberance of the era.

In accepting this inheritance, my generation within the last 20 years ingeniously reduced the skeleton system to a minimum, and the young architects took it over as a finite structural concept recently extolled as equaling the glory of classic Greece.

Moreover, fortified by the torrent of slogans and semantics accompanying the analytic formations of the Dutch "Stijl" group, the abstract and applied experiments of the German Bauhaus, the transitory though time-conditioned stages of the pictorial arts, and finally the pseudo-scientific introduction into architecture of the fourth dimension (i.e., the notion of space-time which is really conceivable only to initiated mathematicians) *rationalism* was proclaimed as the destiny, and *intellect* as the creative source of contemporary architecture. This as if great scientific and artistic creations were dictated solely by man's intellect and not, at least in equal measure, envisioned by his instantaneous perception of organic truth inherent in natural phenomena.

A renowned architect traces a path over more than

45 years of faith to an idea



Columbus House, Berlin

The ancient systems of Post and Beam and the medieval system of Buttress and Vault—both unelastic rigid constructions in stone—resulted in structures and forms invented by man. But the structural principle of *elastic continuity* is derived from Nature, its continuity of form made possible by the elastic nature of steel and reinforced concrete. Only in the last few years has this revolutionary principle of elasticity in steel and reinforced concrete been applied as the structural basis for a new architecture.

Wright's Wax Factory, Racine (1940 and 1950); Nervi's Exhibition Hall, Torino (1948); Niemeyer's Twin Theater, Rio de Janeiro (1949); Torroja's Hipodromo, Madrid (1949); and Candela's Cosmic Ray Laboratory, Mexico City (1952) show in structure and form this concept of elastic continuity envisioned in my early sketches.

I believe that the architecture of elastic continuity—in contrast to skeleton constructions—opens for our art a new world in which intellect and imagination are again indivisible.



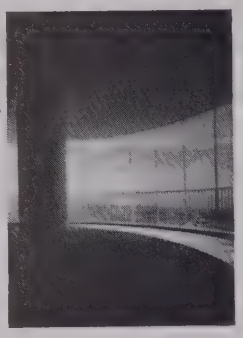
sketch for Einstein Tower



De la Warr pavilion, Boxhill on Sea

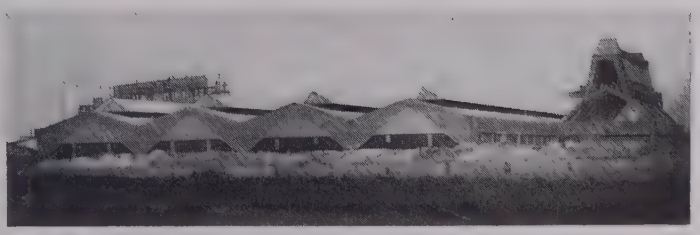


sketch for a skyscraper in concrete



Alfred Bernheim

Hadassah University Medical Center

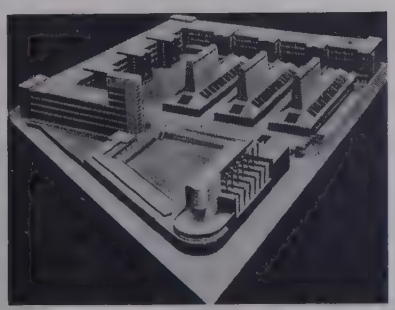


hat factory, Luckenwalde



Alfred Bernheim

Government Hospital, Haifa



textile factory, Leningrad

Schocken Department Store, Chemnitz



Maimonides Health Center, San Francisco



Stone & Steccati

My approach to building a modern synagogue

With a few exceptions like Frank Lloyd Wright's Unity Temple at Oak Park, Ill. (1906) and Bruce Goff's Sea Bee Chapel at Camp Parks, Calif. (1944), religious buildings in the US have followed or, at best, modified the patterns of ancient or medieval originals. And synagogues have followed the rule.

When, in 1945—shortly before the end of the last war—I was called to build the St. Louis synagogue, I was immediately aware of the challenge involved in designing a sacred building in the spirit of our age of great changes.

The foremost problem of a contemporary synagogue was to devise an expansible and flexible plan.

Contrary to a church, where the number of worshipers remains fairly even throughout the year, a synagogue has to make provisions for two to three times the normal sabbath seating on the High Holy Days—the New Year and the Day of Atonement. And since all present religious buildings are not merely houses of worship, but rather community centers complete with assembly hall, Sunday school and administration offices, it was quite logical to use the assembly for this required extension of the synagogue proper.

To permit this combination and, at the same time, to provide a common entrance to the sanctuary (fixed seats) and to the assembly (movable seats for its varied uses) I introduced a foyer between sanctuary and assembly. This intermediate space has folding doors and disappearing walls between it and the sanctuary and assembly. It can serve as an expansion of either larger space, as a connecting link between both major rooms on High Holy Days, or, in its own right, as a meeting place.

The introduction of a foyer makes it possible to conceive all three public spaces as a religious and architectural entity. Beyond its functional and economic advantages, this unification has an important symbolic significance—the very aim of any religious building.

Since the beginning of time, the dual nature of man—always between good and evil, between individual demands and collective responsibilities—was in need of a unifying principle. To have faith in the meaning of life as such he created in his religion a spiritual unity. To sense the purpose and prove the value of his own life he formed his environment as creative unity.

Man's most creative expression of this has been his religious building, the highest form of art of which he is capable. It is his reply to the unknown, his message of the unknowable to coming generations—the symbol of man's finite life within the infinite cosmos, of man's existence determined by the field of forces that brought his specific world into being.

As such his sacred building is a dramatic performance where every event is part of the unity and progress of the play: the sequence in every room of color and material, the progression of every space, of light and of shade toward the consummation of the Divine message emanating from altar or ark.

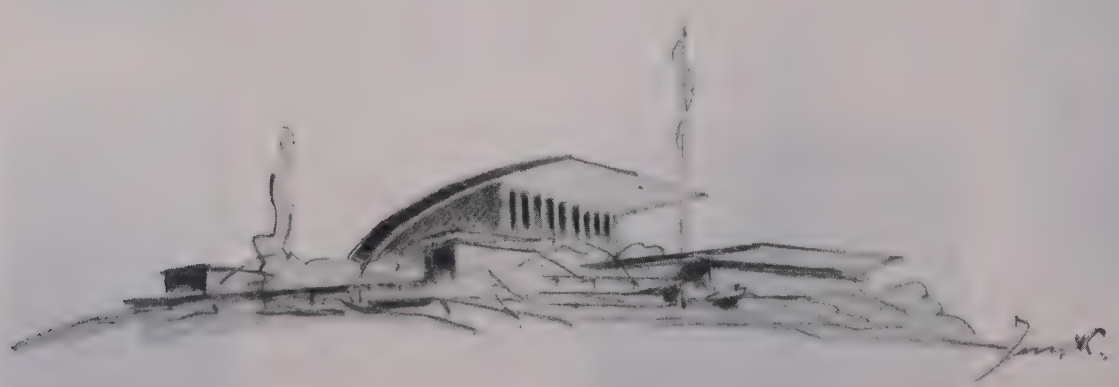
Today the effects of scientific insights and technological inventions on his material and mental habitat have not changed man's dual nature; the "New Heavens" do not doubt, but only confirm the interdependence of matter and energy.

In his troubled and confused present, living as he is between the fixed ideas of a relatively tranquil past and the yet unborn values of his future, man's return to spiritual unity is most urgent, the evidence of creative unity in his sacred building, therefore, most enlightening. And as for its beauty, as Ezekiel said, "He set it in majesty."

This is what I tried to accomplish in my synagogues.

—Eric Mendelsohn

Congregation B'nai Amoona, St. Louis, Mo., Synagogue and Community Center. *Color photograph is view from the avenue which abuts the main entrance (see plan, p. 111). With perspective sketch below left, it shows the flaring roof of the temple itself, which dominates the building mass.*





SYNAGOGUE IN ST. LOUIS, MO.

CONGREGATION B'NAI AMOONA, SYNAGOGUE AND COMMUNITY CENTER

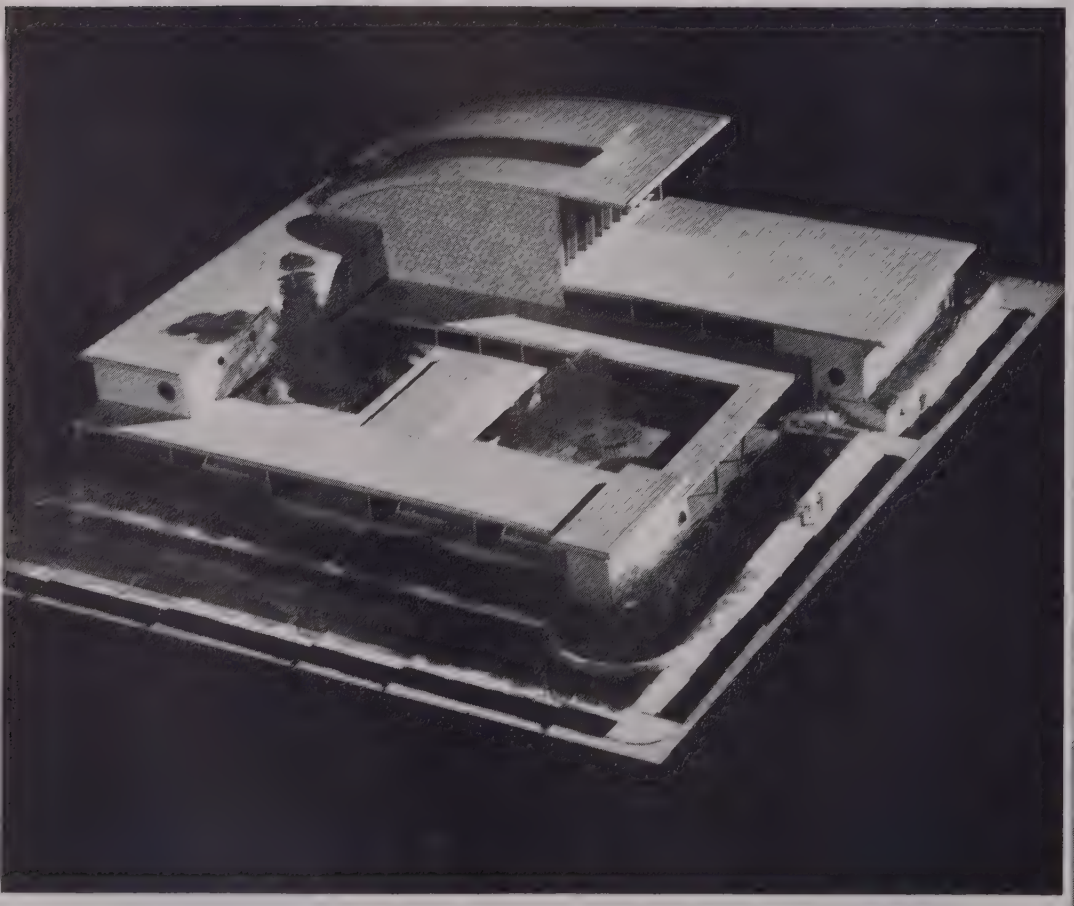
ERIC MENDELSOHN, architect
MICHAEL A. GALLIS, associate
BERNARD BLOOM, supervising architect
ISADORE THOMPSON, structural consultant
CLYDE E. BENTLEY, mechanical consultant
I. E. MILLSTONE CONSTRUCTION CO., general contractor

The temple proper of Congregation B'nai Amoona Synagogue has a seating capacity of 600, but combined with foyer and assembly this is enlarged to 1,500 on High Holy Days. The merger is made by folding the foyer partitions, a very efficient arrangement for flexibility. Daylight is brought into the temple through a monitor running up the center of the parabolic shell (photo, right) and through a high clerestory across the west wall (see section). Although the columns supporting the roof at its apex are thin, they are quite deep; together with the cantilevered overhang of the roof slab itself, they form a system of sunbreaks against the crucial west exposure.

Designed in 1946 and built in 1949, the synagogue is on a 200′ square corner lot, and the buildings (including an interior court) eventually will cover almost the entire area. Temple, assembly and school are tightly arranged around an enclosed garden, which is set some 10′ above street level, making it more than merely an entrance decoration. This change in level also guarantees a maximum of quiet and repose for the interior of the project.

Further to avoid street noises, the temple proper is placed at the innermost corner of the lot, the sweep of the curved roof—a large parabolic slab—rising from near the rear boundary at the intersection of two of St. Louis' alleys.

Photos: (models) Stone & Steccati; (others) Hans J. Schiller



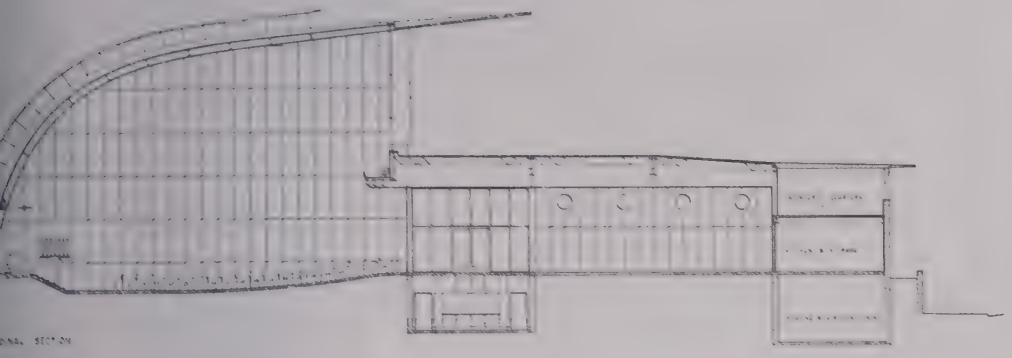
Bird's-eye view *of model shows how lower sections of the complex —the school and community center blocks—are used as buffers to insulate the temple itself from street noises and preserve the proper quality of serenity.*

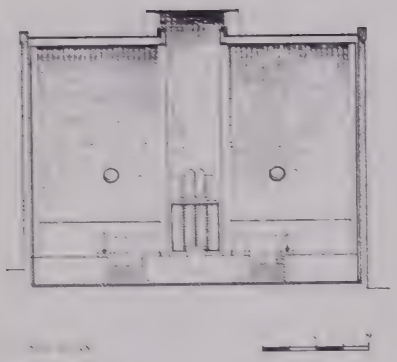


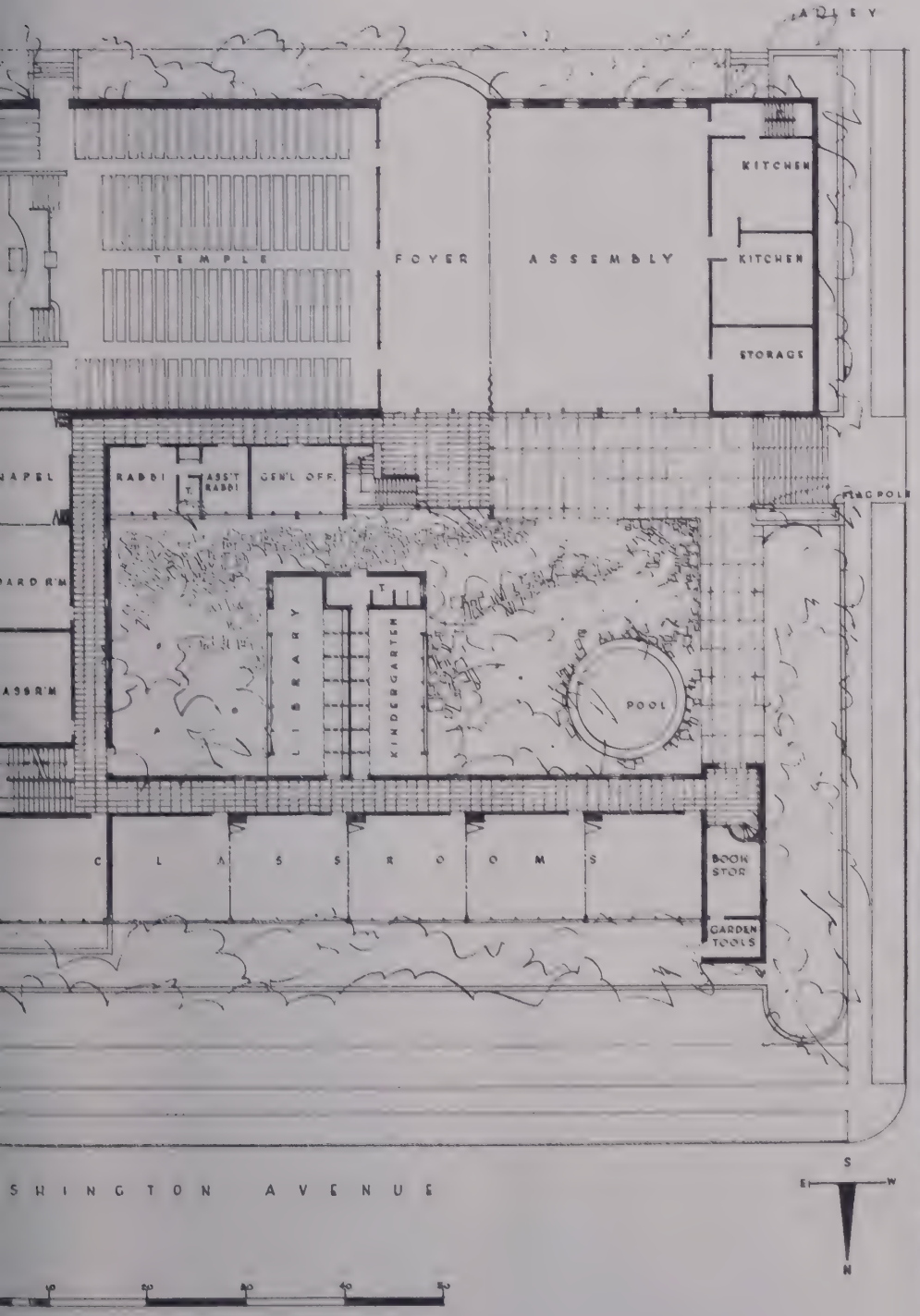
Focus of the temple *is the ark (above) flanked by candelabra, eternal light, and niches for the elders' seats. Geometrical ornamentation of the niches still is unfinished. All woodwork is stained brown red (see also p. 112). Acoustical tiles on the parabolic ceiling are oyster white, matched by the painting of the parabolic steel frames. Small circular windows on both sides of the ark are view windows for the choir.*

Classroom wing *(below) has long glazed wall facing North. Roof is reinforced concrete flat-plate design, supported by closely spaced tee mullions and load-bearing concrete block walls faced with tan Ohio bricks laid to pattern. In construction the aim was to reduce concrete formwork to a minimum; concrete floor slab rests directly on ground.*



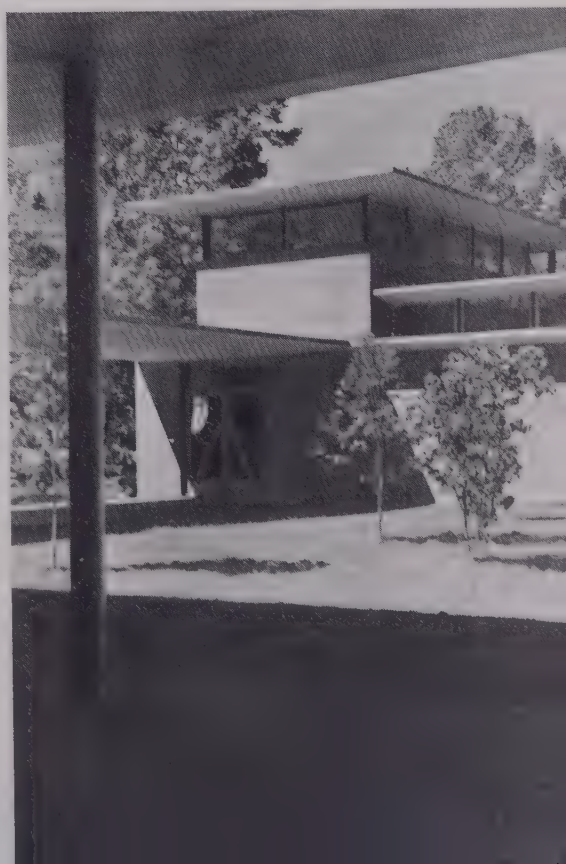






Sections and plan *show how rising curve of temple roof from behind ark is supported on large tapering steel beams, and how temple, foyer and assembly can be combined by shifting movable partitions. School area for 400 pupils has been built, but library and nursery which jut out into interior garden have not yet been added.*

View from pergola *leading to main entrance (below) shows the junction of the school entrance pergola and the south front of the school building. The corner bookstore (with teachers' study above it) and the two-story school wing at the end of the garden form the counterpoint to the east-west direction of the temple and the one-story classroom wings.*





The ark is a rich and intricate shrine, and in this synagogue is planned to receive additional glory from the afternoon sun flooding in through the long monitor windows which run along the center of the curved roof. The ark door is four slightly convex, open grillwork panels, tall and narrow. Through these the ark curtain is seen, woven in various shades of golden yellows, forming in pattern and color a unity with the ornamented niches to both sides of the ark. The ark in the synagogue is what the altar is in the church. The ark in the synagogue contains the Holy Scrolls of the Torah—the law given by God to Moses; the altar in the church contains the Host—the body and blood of Christ—symbolizing the Lord's presence. During services the panels fold back out of sight.

Both altar and ark are the visible foci of the religious rites. As such, the altar is crowned by the image of Christ on the Cross, the ark by the Ten Commandments—the Word of God—the moral law to guide all men.

Hans J. Schiller



"For the word [light] of the Lord goes forth from the law"—Torah

***Ark and candelabra** are brass and nickel silver. Candelabra have vertical fluorescent tubes.*

***Vast and serene space** is created by the auditorium's soaring roof and monitor. Ceiling is finished with acoustical tile; side walls, with stained maple plywood. View is from foyer at rear of auditorium.*

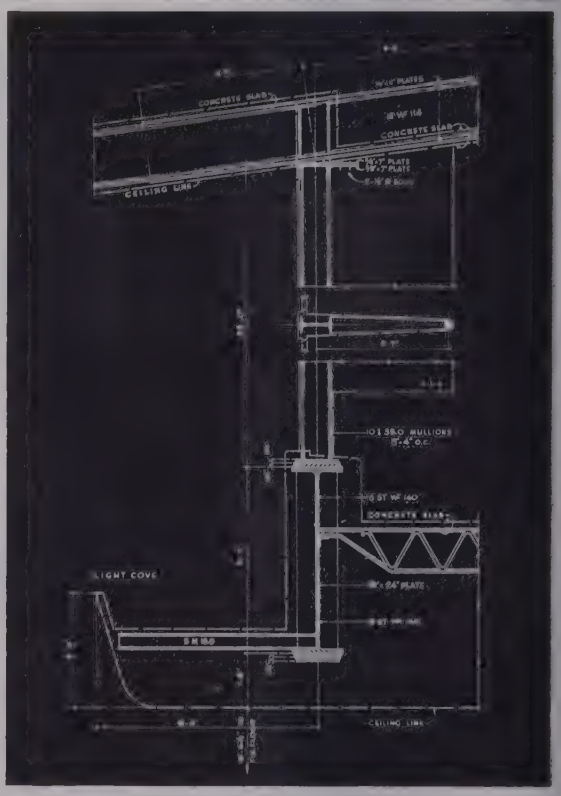
In this unique building the structural method is clear and formative. The main roof of the dominant shape, the temple, is supported by gracefully curved and tapered steel beams. After rising, these beams cantilever out 26′ from their supporting columns to shade the west wall's glass screen, while the supporting columns extend down to a steel girder in the assembly roof. This construction has a very dynamic feeling; it is balanced so well that the long bent beams seem almost to be held in tension by their west columns, instead of resting compressively on them. But this thrilling span gives way, nevertheless, after you enter the temple, to a quiet and worshipful atmosphere.

In the lower assembly wing, which can be opened to become a continuation of the temple, the roof structure is steel joists supported by 36″ w.f. spanning beams, under a 2½″ concrete slab. Floors are concrete slabs, and rest directly on the ground. Foundations: continuous footings at heavy loadings, otherwise spread footings; wall beams carried below frost line. Architect's cost report: $630,000 (32,000 sq. ft. at $19.70 per sq. ft.).

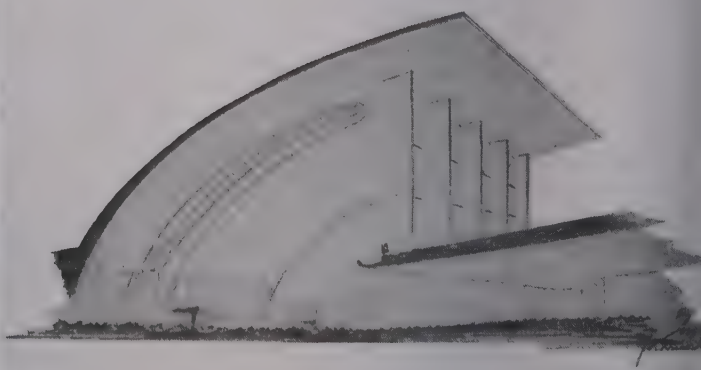


***Tapered beams** are cantilevered 26′ beyond temple clerestory*





***Clerestory details:** note 3′-7″ depth of finlike mullions*



***Perspective section** through synagogue, foyer, assembly*

Clerestory window, *viewed from front of auditorium (left), rises about 30' above open foyer and assembly. From the light cove, up-tilted projectors illuminate the sweep of the parabolic ceiling.*

Construction drama *viewed from approximate location of the ark. The two curved beams shown are the pair on which the roof monitor sits, admitting a long slash of light down the center of the graceful roof. Beams are 42" deep at their bases, tapering to 3½" at the edge at the cantilever. Each web was delivered on the job in one piece. Flanges were then site-welded.*

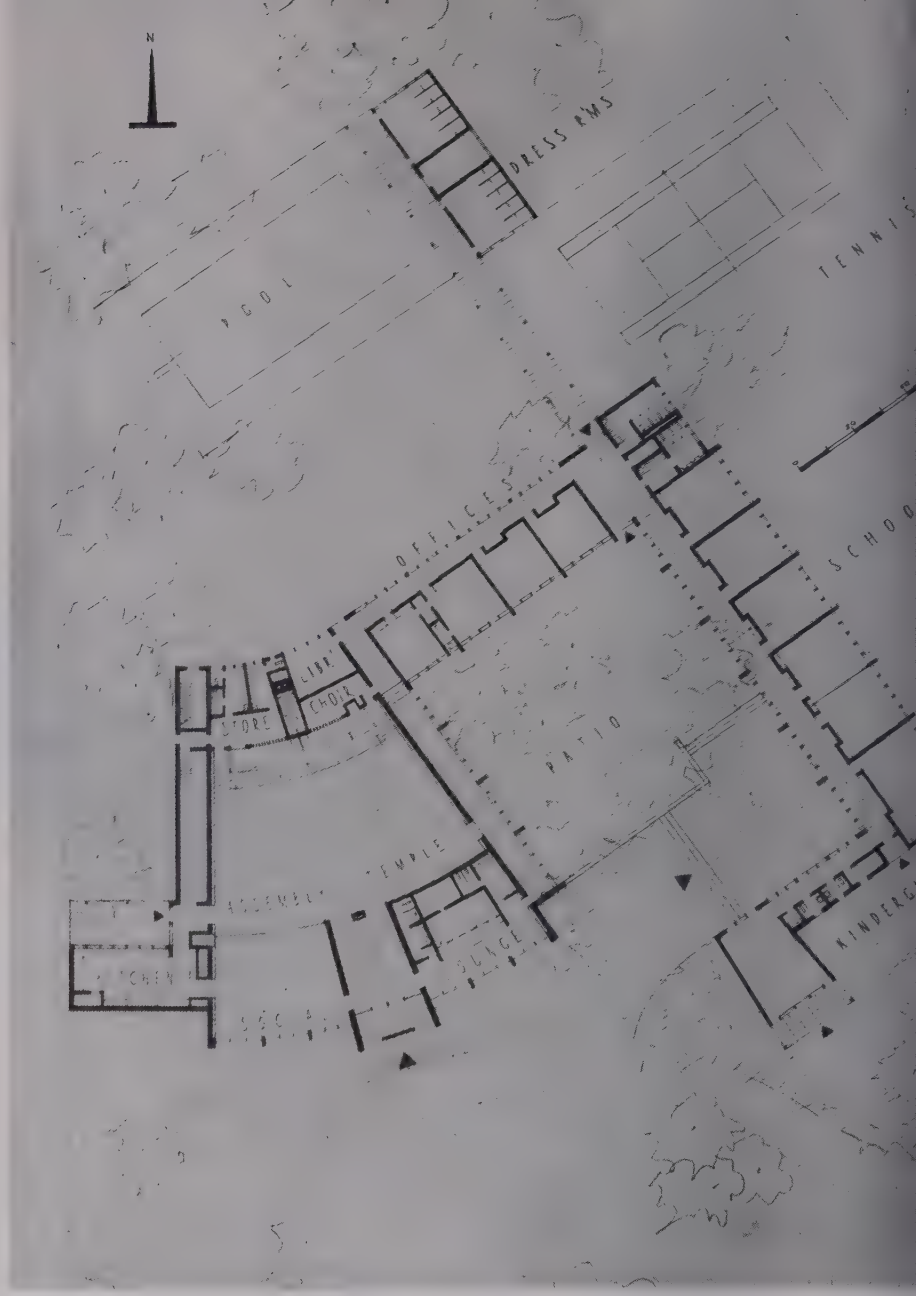


CONGREGATION EMANUEL, TEMPLE AND COMMUNITY CENTER SYNAGOGUE IN GRAND RAPIDS, MICH.

ERIC MENDELSOHN, architect
MICHAEL A. GALLIS, associate
C. A. OBRYON, supervising architect
ISADORE THOMPSON, structural consultant
CLYDE E. BENTLEY, mechanical consultant
OWEN-AMES-KIMBALL CO., general contractors



Detail from architect's work sheet and perspective study



This synagogue, designed in 1948—with building begun in 1950 and not yet complete—again allows for extension of the temple itself by expansion into the assembly on High Holy Days. But the expansion this time is sideways, not to the rear; the two rooms, each seating 200, are side by side in one building mass, and are divided by a motorized sliding wall down the center.

When a seating capacity of more than 200 is necessary, the motorized wall is moved into an outside partition pocket, and both rooms are combined. Again this combination finds explicit architectural expression, this time in a finlike ridge on top of the roof to hold the door track. This ridge terminates in a wall behind the temple structure and is a significant feature of the architectural composition (photo, right). On High Holy Days the ark—normally recessed in the main temple wall—moves to the center of the podium. This 17,000 sq. ft. synagogue cost $360,000, or $21.20 per. sq. ft.



Stone & Steccati

Site, *2½ sloping acres, was used in more open way than in St. Louis synagogue, although enclosed patio is still a feature. Administration and school wing are on higher level than temple. Construction of this wing: wood frame and brick veneer; of temple wing: steel frame, haydite block, brick veneer.*



Temple interior *shows ceiling shelved into light coves and walls covered with large driftwood-stained birch panels in sections which follow the rhythm of the choir openings. Decoration of the podium wall is dominated by the first letter of the Lord's name in Hebrew, in conjunction with the intricate ark doors. Golden, this wall is brightly lit from the ceiling and reflects its festive color onto the side walls. The large seven-armed silver candelabra and the flower bowl, lit from below and symbolizing the eternal light, emphasize the different levels of the podium. Chairs are birch with upholstered seats in Venetian red velour repeating the color of the carpet, podium balustrade and pulpit.*

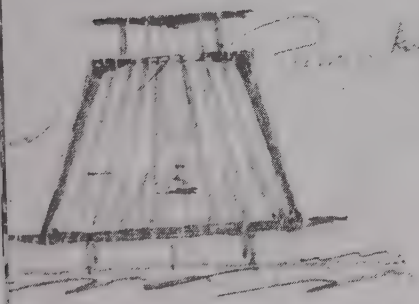
Fryer 22 × 72 = 1584 : 144 = 200 seats +

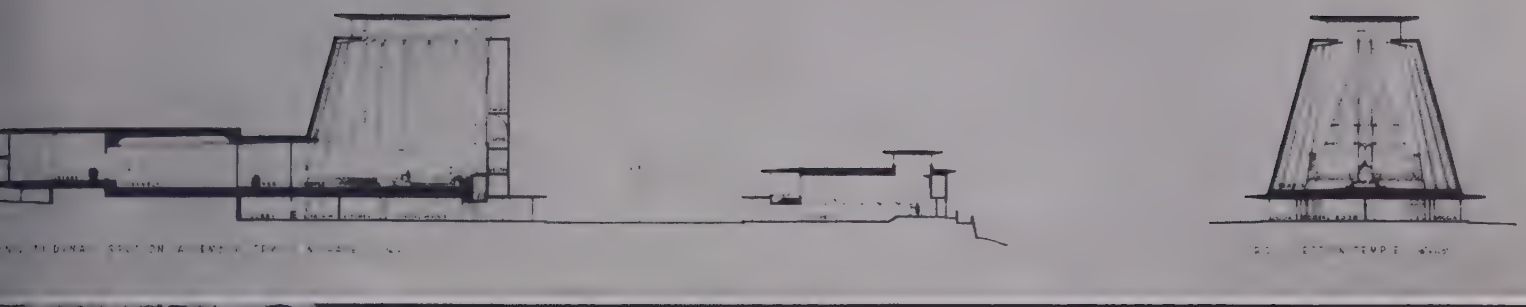
Temple (A) $\frac{r^2\pi}{2}$ = 88 × 40 = $\frac{5544}{2}$ = 2772 sq ft
= 2200 sq ft
(B) 30 × 80 = 2400 sq ft
4772 sq ft : 7.5 = 636 seats

Holy of Holies

HOUSE OF CONGREGATION

HOUSE OF PRAYER







Stone & Steccati

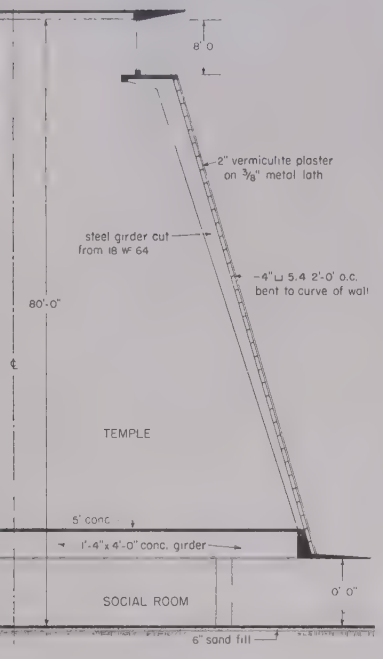
SYNAGOGUE IN DALLAS, TEX.

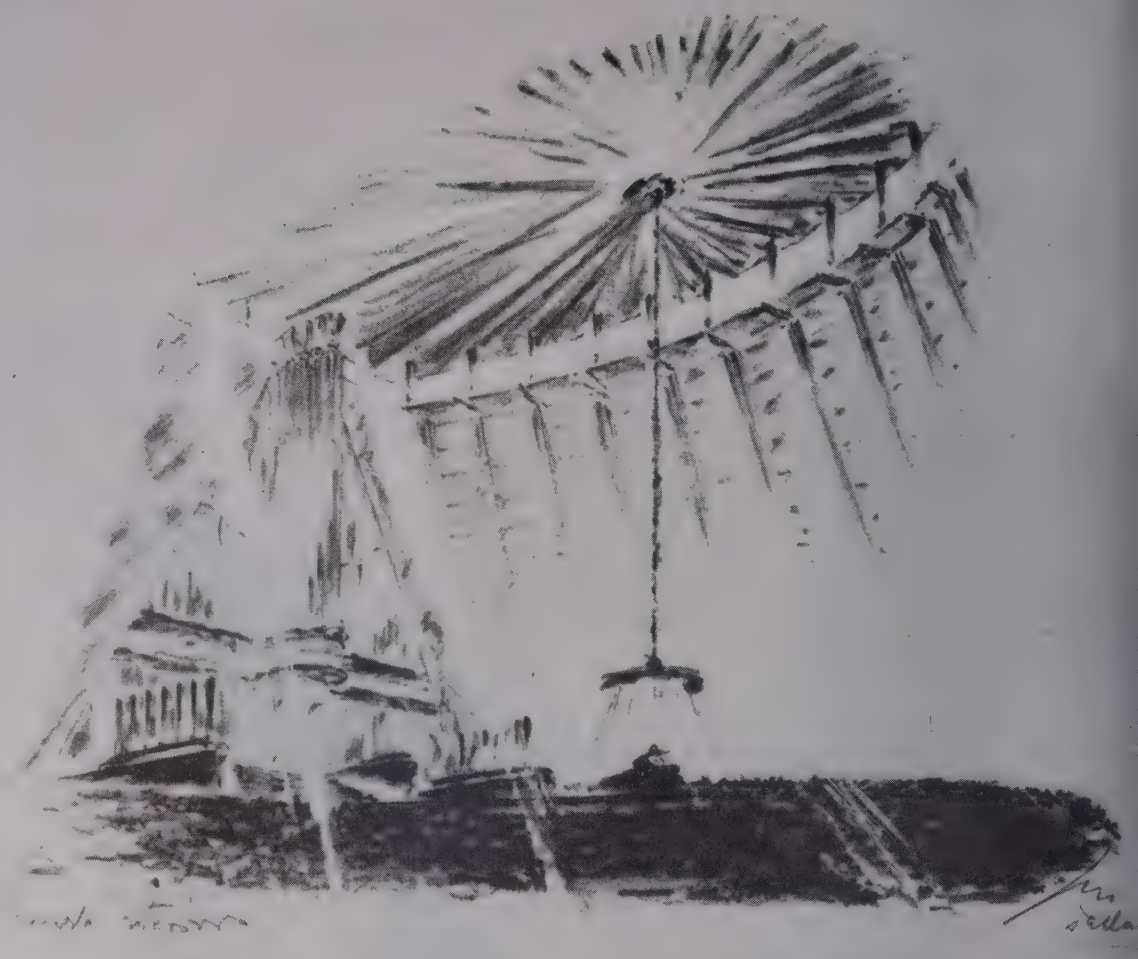
TEMPLE EMANU-EL, Temple and Community Center
ERIC MENDELSOHN, architect
MICHAEL A. GALLIS, associate
ISADORE THOMPSON, structural consultant

Designed in 1951, and the biggest of the three synagogues shown on these pages, this one will seat 600 normally (with a chapel for 150) and is expandable to accommodate 1,600. It will also have 32 classrooms for 800 students, an activities room, a library, and a craftsroom, besides administration areas, etc. All this will be housed in a large, delicately sprawling group of structures, on a rugged creek-side site which Mendelsohn describes as "splendid though intricate." He will exploit the intricacy of this site, and the balm of the southern climate, to create an architectural interplay of closed and open spaces crowned by the highly interesting shape of the temple proper. This high mass, the design's center of gravity, has a horseshoe-like plan which tapers upward, cone-like. It is divided vertically into two working levels: on the main floor the entry, social rooms, open loggias and lobby; on the upper floor the temple proper, foyer and assembly—divisible into three separate areas. Contractor's cost estimate for this 84,000 sq. ft. building group: $17.80 per sq. ft., a total of $1,500,000.

←*The architect's work sheet*

Interior sketch *shows how architect plans to use clerestories to reflect light from the ceiling. Pipe organ and choir recess will enliven the focal ark wall. In the temple's center, at the end of the processional platform, is the reading desk.*



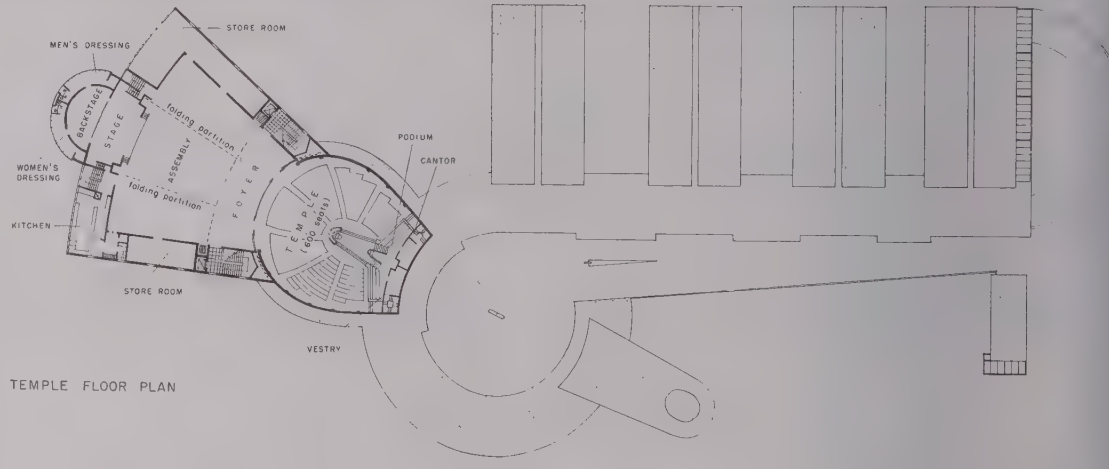


STRUCTURE

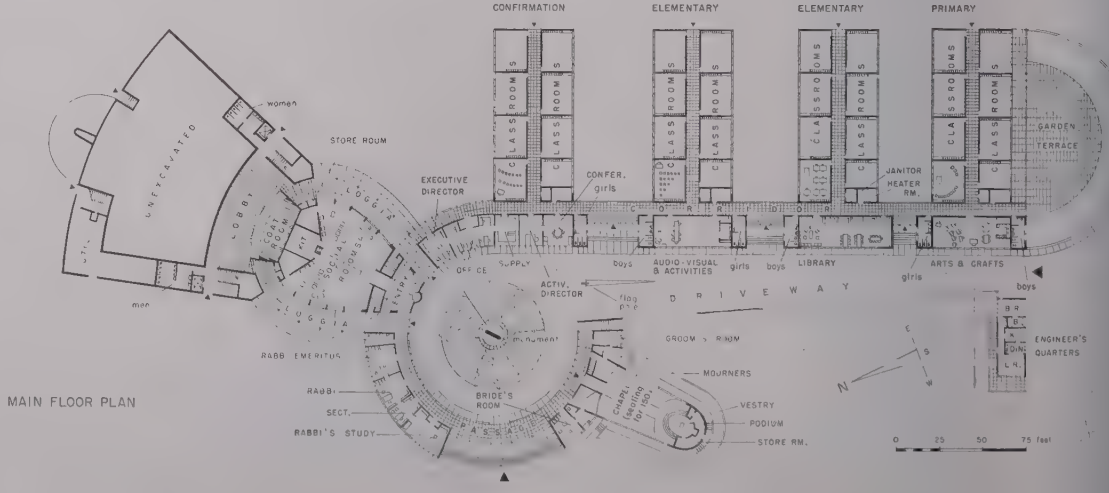
Temple: *reinforced concrete slab floor supported on concrete girders which cantilever to carry walls and roof. Tapered structural steel ribs terminate at concrete compression ring, which supports structural mullions of clerestory and roof.*

Assembly area: *light-aggregate concrete roof on steel joists is supported by welded steel trusses. Concrete-block walls; concrete slab on ground.*

Classroom area: *load-bearing cross walls between classrooms are of 8" concrete block. Precast concrete units span between walls to form roof and finished ceiling. Concrete slab on ground.*



TEMPLE FLOOR PLAN



MAIN FLOOR PLAN

Towering front walls *of the temple will carry the sculptured emblems of the Twelve Tribes. Below temple and temple court will be a forecourt, reaching to the densely wooded shore of the creek, a quiet resting place. Note in the model that all wall openings are deeply shadowed by wide overhangs.*

& Steccati



RECREATION CENTER

for a factory achieves country club atmosphere in a building of multipurpose rooms

This building is not a country club but a recreation center for a manufacturer's 1,800 employees. Its facilities are so complete and well ordered, its appearance so unostentatiously pleasant, that other employers are carefully studying it. Besides Board Chairman Ekman of Electrolux (a vacuum-cleaner producer near Greenwich, Conn.), the team that produced it included a recreation consultant, architects, engineers and builder.

Recreation Consultant Allen made a dual survey of existing facilities in the community and of worker's needs. Greatest demand was for bowling alleys. Also needed: a recreation hall-auditorium, snack bar, craft and meeting rooms, plus the usual outdoor athletic fields and lockers for them. The usual swimming pool was omitted because beaches were nearby.

When the owner started to acquire a site several miles from the factory, Allen objected because workers will not travel far from a plant to a recreation center, he said, except in a one-company town. So a site of 14 acres was bought just across the road.

At the outset the recreation consultant stressed two requisites:

1. Flexible-use rooms. Despite strong pressure from enthusiasts, not every sport and hobby can justify the cost of a separate room. Nor can all future activities be forecast. Here, for example, the recreation hall handles basketball, shuffleboard, banquets, dances, concerts and theatrical performances. The stage is used for table tennis and children's movies. The projection room is used for a sewing class and the basement houses an upholstery class.

2. Step-by-step development. To permit completion by stages if desired, the building was designed at Electrolux' request in four self-contained sections: the bowling alley; lobby and first-floor lounge; second-floor club rooms; recreation hall. (Though the structure was actually completed in one operation, this "unit" idea gave double assurance that each part would be adequate.)

Architects Raymond & Rado accordingly divided their structure into four parts, for each of which **Engineer Weidlinger** devised the most economical structural system: 1) a one-way beam and slab roof over the bowling alley; 2) a two-way beam and slab floor over the lobby and first-floor lounge; 3) a two-way flat plate roof over the second-level club and game room; 4) a reinforced concrete cantilever combined with a three-hinged trussed steel arch (see p. 127) over the recreation hall.

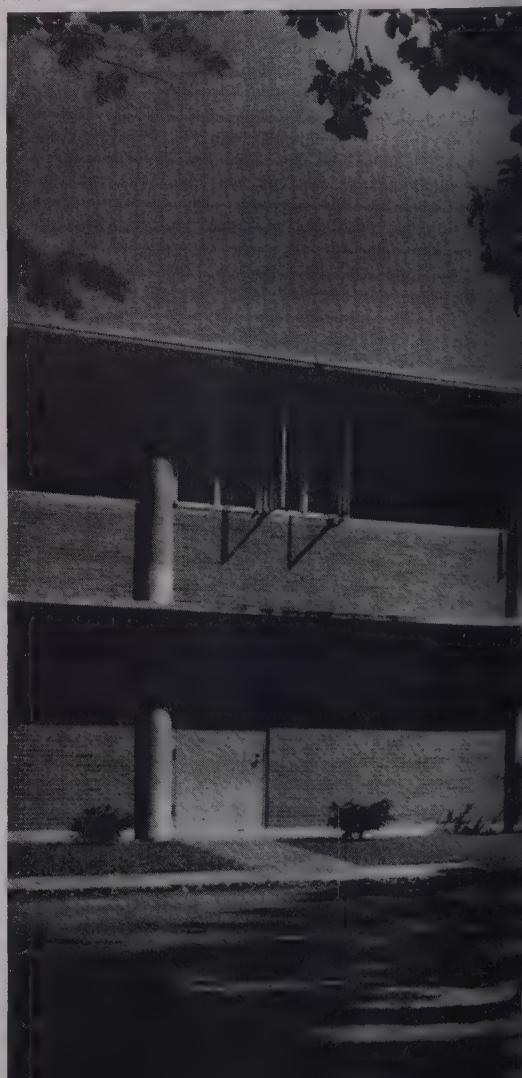
Architecturally the building came out crisp, clear and rhythmical (but not pretentious) through workmanlike expression of the concrete frame and direct use of materials. By running the brick curtain walls *inside* the round concrete columns of the two-story part of the building, the architects achieved unbroken flat interior wall surfaces, and on the exterior a clear and "plastic" expression of the frame.

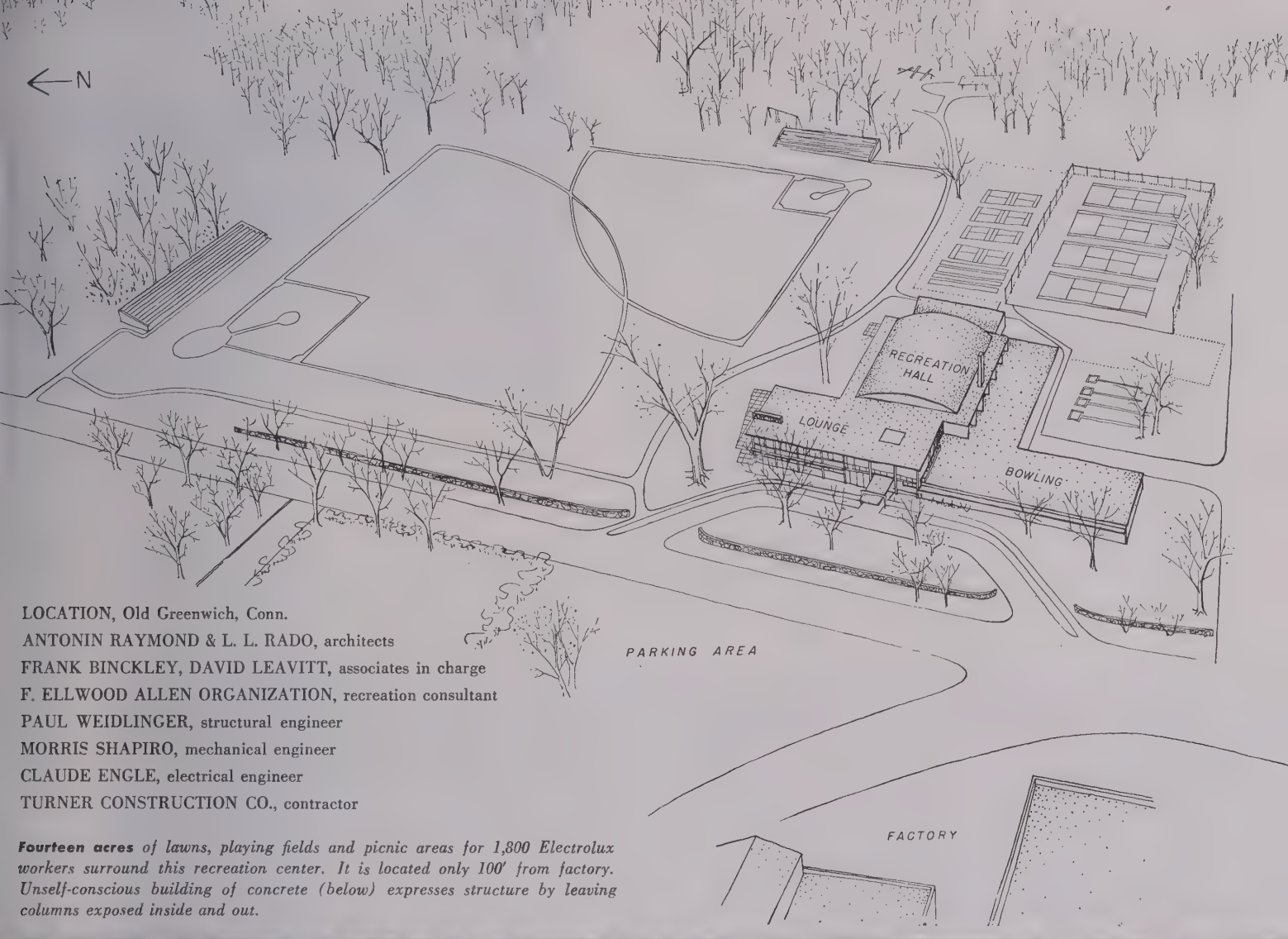
The owner's stake of nearly $900,000 in the center raises the question why Electrolux started the project. Answer: It believes such a project is an essential element of sound industrial management. (Ultimately the Employee Association, a worker group handling recreation programs, will operate the center by itself.) Thanks to this policy, Electrolux can point to low turnover, low absenteeism and a long waiting list. (Nearly a third of the 1,800 workers have been with the company ten years or more; 80% have five or more years' service.) Though increased production cannot all be credited to the new recreation center, it helps mightily.



***Strong pattern** is created by the exposed columns, windows, brick panels and the hovering roof of upper level terrace.*

Photos: Ben S hnall

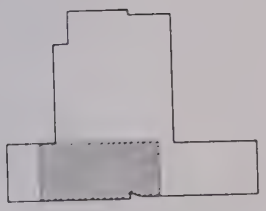




LOCATION, Old Greenwich, Conn.
ANTONIN RAYMOND & L. L. RADO, architects
FRANK BINCKLEY, DAVID LEAVITT, associates in charge
F. ELLWOOD ALLEN ORGANIZATION, recreation consultant
PAUL WEIDLINGER, structural engineer
MORRIS SHAPIRO, mechanical engineer
CLAUDE ENGLE, electrical engineer
TURNER CONSTRUCTION CO., contractor

Fourteen acres *of lawns, playing fields and picnic areas for 1,800 Electrolux workers surround this recreation center. It is located only 100′ from factory. Unself-conscious building of concrete (below) expresses structure by leaving columns exposed inside and out.*





LOBBY

Hub of the three-winged building is the entrance lobby. Directly ahead of the entrance doors is the recreation hall, to the left is the lounge and club-room area, to the right the bowling alley.

Grouped in the lobby for accessibility are 1) the snack bar, the most popular element in the center; 2) the administrative office from which all activities are controlled; 3) the main kitchen which can serve banquets in the recreation hall and small parties in the lounge from this central point; and 4) rest rooms.

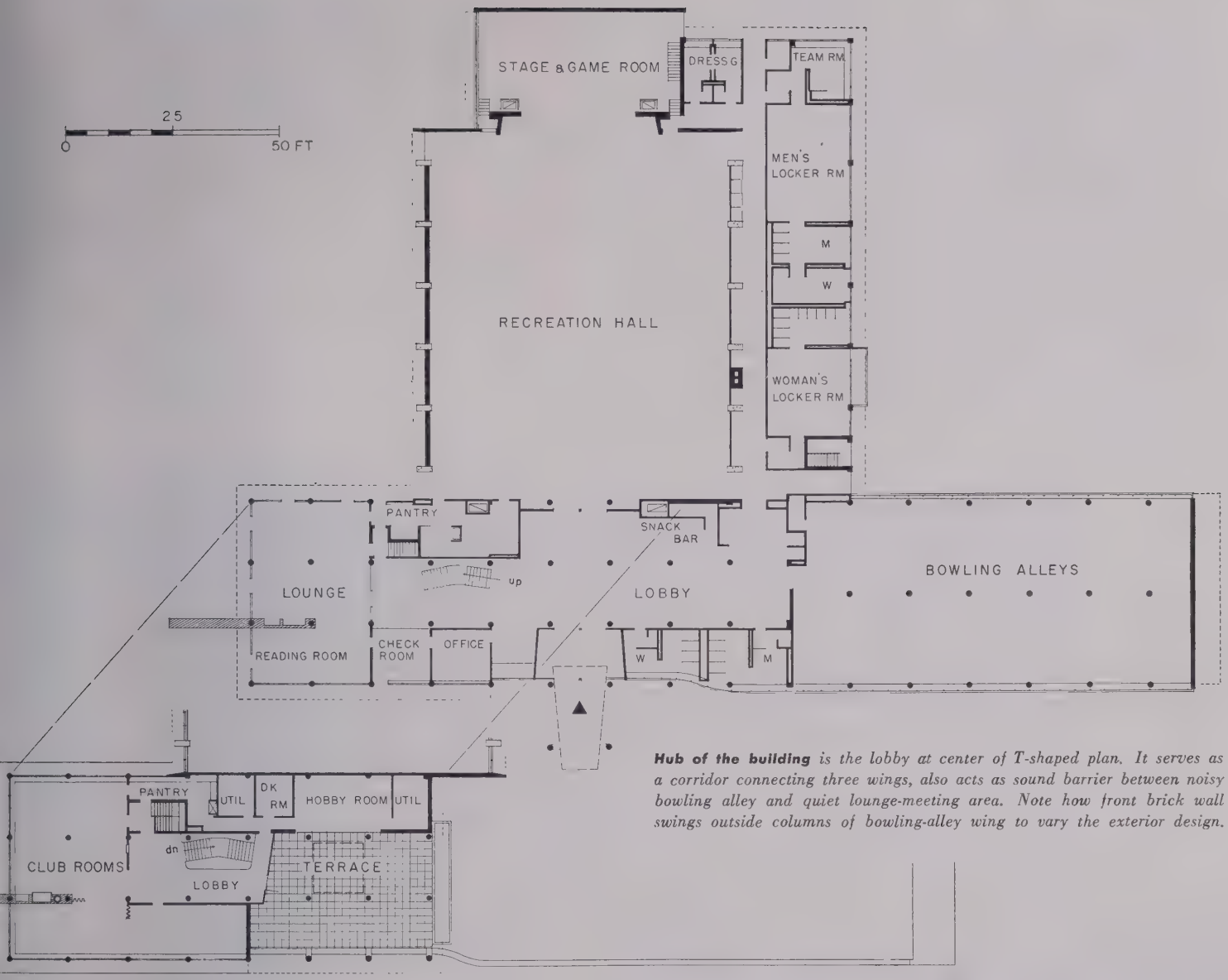
Placing these elements in the lobby permits any wing or wings to be closed off when not in demand yet leave the building open for special activities.



Entrance *is an open invitation giving view of lobby from street through floor-to-ceiling glass. Sturdy concrete columns contrast pleasantly with light roof and canopy slabs.*

Lobby, *viewed here from beside stairway toward snack bar, is finished in easily maintained materials: terra-cotta walls, marble chip composition floor and unpainted aluminum door and window frames. Only nonwashable element is hung acoustical tile ceiling.*





Hub of the building *is the lobby at center of T-shaped plan. It serves as a corridor connecting three wings, also acts as sound barrier between noisy bowling alley and quiet lounge-meeting area. Note how front brick wall swings outside columns of bowling-alley wing to vary the exterior design.*

Floor-to-ceiling windows *and interior planting adjoining the entrance give maximum openness to lobby area.*





Snack bar*—most popular spot in the building—is located in lobby for easy accessibility from all areas. View is toward lounge wing.*

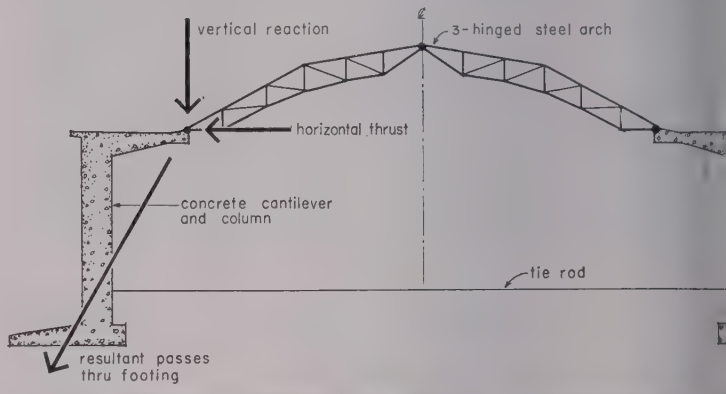


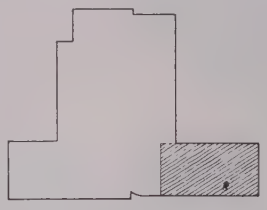
RECREATION HALL

Stem of the T-shaped building is filled with the multipurpose recreation hall and adjacent locker-shower rooms. (As in good school design these rooms serve outside as well as inside athletic activities.) Collapsible bleachers line one side of the hall and a stage occupies the far end. The steel-splined maple floor provides playing or dancing surface over earth-bearing concrete slab.

The hall roof is an interesting combination of reinforced concrete cantilevers and three-hinged trussed steel arches. The span of the hall (which is 80′ wide) was too great for economical use of conventional steel or concrete systems—yet, not great enough to justify special long-span construction. For this reason, the steel span was reduced to 60′ by supporting it on concrete beams cantilevered 10′ from the columns. This structure produced enough height at the center for basketball while low ceilings along the sides scaled the room down for meetings and banquets.

Recreation hall roof *is formed by 10′ cantilevers and 60′ trusses. Center height permits basketball, lower sides make space more intimate for meetings and dances. Optimum range of cantilever vs. truss span fell within hoped-for architectural division of 10′-60′-10′. Note that resolution of horizontal and vertical forces at truss end passes through column footings.*





BOWLING ALLEY

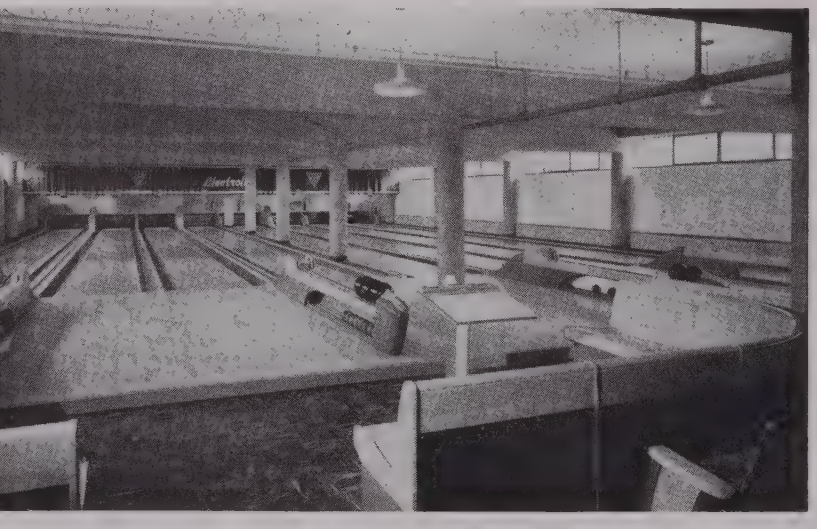
Noisiest activity in the center is bowling and to keep that noise away from other areas, the bowling wing was stuck as far out from the building as possible. Locker rooms, snack bar and lobby surround it where it joins the building to absorb as much of the noise as possible.

Ample spectator space is provided at the end of the wing where an athletic-equipment sales counter occupies one corner.

The 52′ wide wing holds eight alleys with four on either side of the single line of columns down the middle; deep (2′-2″) concrete girders span the 26′ from center to outside columns.



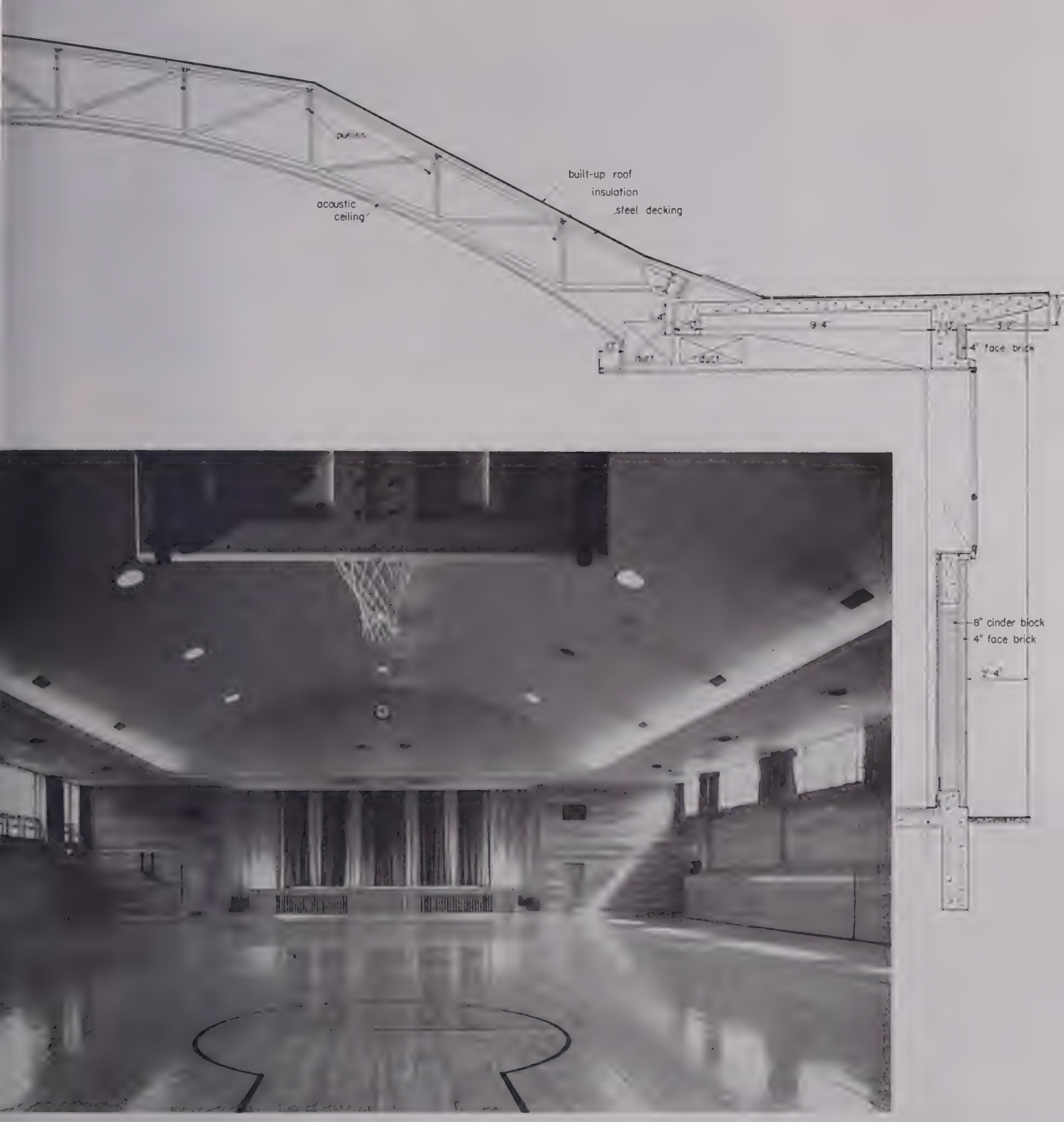
Double-duty stage *is used as table tennis room and children's movie theater. Slots in front face of stage provide cold-air return for air-heated hall.*



Eight alleys *fill one-story bowling wing. Space is interrupted by only one line of columns down center. Concrete girders span 26′ from center to side columns.*

Bowling wing *is only one which has a continuous brick wall uninterrupted by columns—in sharp contrast with brick panel walls of other wings.*



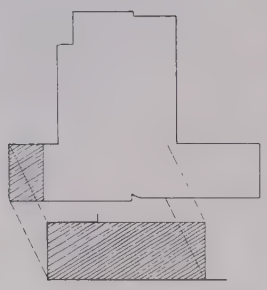


Recreation hall *measures 80' x 96', has warmth of naturally finished wood on floors and walls plus finished ceiling of acoustical tile.*

Hall wing, *viewed from playing fields, shows "plastic" effect of exposed structural columns. Rear wall of gym is used for handball. At right is lounge.*







***Sun deck** over lobby has thin flat plate roof with open square in center for sun bathers.*

LOUNGE AND CLUB ROOMS

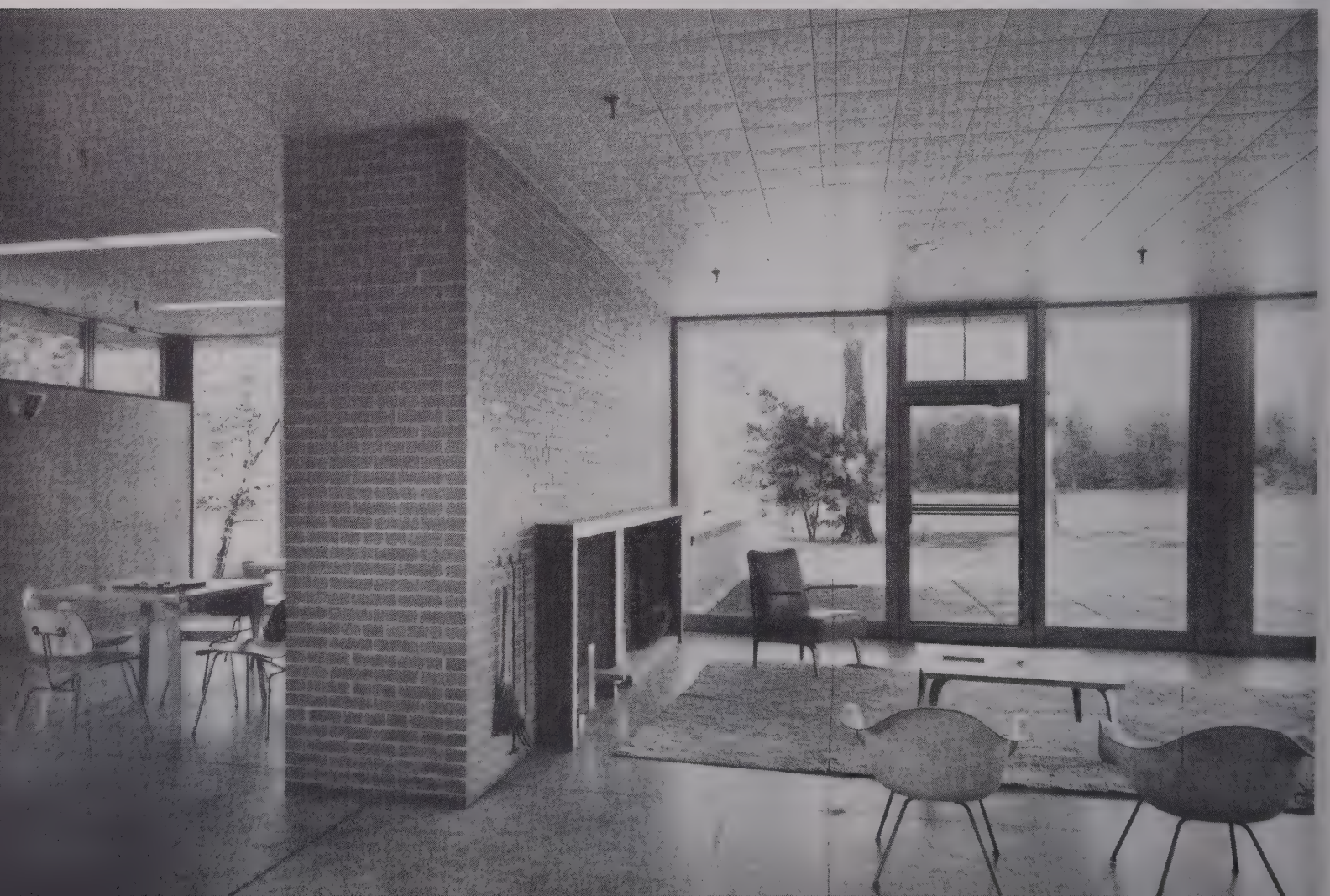
Quiet activities are centered in the two-level wing overlooking the athletic fields. The variety of activities taking place here includes: bridge parties, showers, other small private parties, chess and checker tournaments, reading, TV-watching, club meetings.

The ground-floor lounge and game room open to terraces which in summer become an extension of these areas.

A fireplace wall divides both levels of this wing forming two semi private rooms on each level. Upstairs rooms can be further divided by collapsible partitions suspended in ceiling tracks.

While every attempt was made to create a maximum amount of flexible, divisible space here and elsewhere in the building, experience shows a need for even more small rooms. The need—now principally for shop rooms—may result in another wing behind and parallel to the bowling alley.

***Reading room** and game area in lounge wing are divided by fireplace wall that extends to terraces. In summer these terraces act as lounge extensions.*







New Orleans proposes a Pied Piper answer to the high cost of city schools:

"JUNK THE NEIGHBORHOOD SCHOOL"

build an educational compound in the country, send the children out of the city each day



From their homes *(dark area at heart of city) children would ride buses each day out to their new school village (x) in the suburbs.*

The x on the map at left marks the spot where New Orleans will build a 90-acre "village" of schools and playgrounds.

The land for the village is already bought. If the citizenry backs the plan (beginning with construction of the high school in 1954-55), a strange and dramatic event will occur every weekday morning in a perfectly commonplace way.

A densely packed 2¼ sq. mi. slum near the heart of the city will be swiftly emptied of nearly all its public school children. Thousands upon thousands of them. They will be gone, out of the city all day. Even the little lame boy will not be left behind as he was when the Pied Piper played at Hamelin.

The tune the children will dance to is the sweet jingle of money. Planner Charles Colbert estimates this one school village—accommodating 15% of the city's public school children—will save more than $11 million in direct land costs alone, a saving so huge it "would provide the children with the finest of bus transportation to the village site, at today's prices, for more than a century."

Add to this the lump revenue the city will get from selling expensive downtown sites, the year-in, year-out income from adding these sites to the tax rolls, the savings from centralized school supervision, construction, services and warehousing; subtract the headache and expense of trying to accommodate wildly erratic child-population peaks and dips in varying neighborhoods, and it is plain that Colbert has hit, *at least economically*, on a plausible solution to the intolerable poverty of the public schools* in many of our big rich cities.

Colbert calls this Pied Piper scheme "perhaps the first major new concept in city school planning since the introduction of the neighborhood school," which means since this country began to build public schools.

His suburban school village does bear a sort of resemblance-in-reverse to the consolidated rural school, but the sheer size of the school village, its new approach to the economics of education, and the social changes it implies unquestionably do make it an entirely new creature.

Overleaf is an account of the situation that led to the Pied Piper plan; on p. 132 is a close-up look at the problem of school housing in a specific neighborhood and the solution—an exceptionally nice and economical neighborhood elementary school design; beginning on p. 134 the practical details of the Pied Piper Plan are discussed; and on p. 135 some of the puzzling social questions the scheme raises.

* Estimated 1952 nation-wide expenditures for public school construction: $1.4 billion. Some other 1952 expenditures for comparison: television sets and repairs, $1.7 billion; tobacco, $5.1 billion; liquor, $8.5 billion.

The heritage of "Noah's Arks"

When carefree New Orleans began to suspect something was wrong with its public schools and faced up to the full facts in 1951 it found the facts were horrifying indeed—though hardly worse than in many another city.

All but one of its 90 public schools were declared unsafe or unsanitary. During 1940-50 the population had increased 15% but not a single new public school had been built. Use of schools was fantastically unbalanced. With 50% of the public school enrollment, Negro children had 33 schools; whites had 57. (During the decade Negro enrollment had increased 34%; white enrollment, deserting the "awful" public schools for private and church schools, had decreased 15%.) Some white schools were used as little as 25% of capacity (while rapidly growing white suburbs went school-less); Negro schools were crowded to 250%.

Some schools had no electric light, some no plumbing. In short, the common tale of an appalling burden of obsolescence and plain lack piled up by years of neglect.

All these problems were multiplied to their worst in a packed, predominately Negro slum area known locally as Back-A-Town, outlined on the airview below.

Forty years ago Back-A-Town was a mixture of dairy pasture, pleasant streets, and nauseous mudholes laced with open sewage canals and dotted with shacks built from city dump salvage. The open land was shortly jammed with "Noah's Arks," rows of speculative tenements, rented one room to a family. The Ark and shack blight spread until the early 1920's when the limits of this "Negro residential area" were fixed about as they are today. Density has increased until Back-A-Town has about a third of the city's Negro public school children.

But slum land is too profitable to use for schools.

A three-acre site for a new junior high for Back-A-Town cost $149,000 an acre last year; a conservative average for the area is $99,000. (Exorbitant site costs for slum schools are by no means unique to New Orleans. Conservative per-acre costs in New York's West Harlem and Lower East Sides: $200,000 to $250,000.)

What to do

Now it must be understood that New Orleans has not been sitting on its hands since surveying the dismal facts. It has 18 new schools and annexes built, building or under architectural contract, 15 more programmed for construction before 1955. It has renovated 27 old schools, will renovate another 15 this year. It has switched four white schools to the Negro system.* All this is relieving the immediate pressure in city-wide terms.

But in Back-A-Town especially, the relief is pathetically little against the need and even that little is temporary. When Colbert looked five and ten years ahead one over-riding fact stared him in the face: *Adequately sized sites for a decent Back-A-Town school system were going to cost about as much as the buildings.* This was tantamount to saying there would be no decent school system.

The Pied Piper idea—take the schools out of the slums—is Colbert's incisive slash at his Gordian knot.

* Including one trade that gave a Negro school to whites, a man-bites-dog story in the deep South.

Six miles *from Back-A-Town area (outlined in foreground) is the site for New Orleans' school village (center background)*





A third *of the city's Negro public school children (a sixth of total public school children) live in area to be served by the school village. Direction of New Orleans' growth is eastward, so site in suburban Gentilly is considered a good hedge against long-range population shift. Dark squares represent Negro students; light squares, white students.*



Fairchild Aerial Surveys, Inc.

Typical school *in overcrowded Back-A-Town is the old Thomy Lafon, built in 1901 as a white school, transferred to the Negro system in 1932; it now accommodates—after a fashion—2,200 students in part-day shifts. Renovated in '51, it will hold out a few years longer. Every elementary school in Back-A-Town is similarly old, inadequate, crowded.*

On the next page is pictured the new Thomy Lafon which will supplement the old buildings. But the old school can not be torn down until the school village absorbs surplus pupils.





One response to sky-high land costs in Back-A-Town

is a school design with ideas for Anytown:

THOMY LAFON ELEMENTARY SCHOOL
LOCATION: New Orleans
CURTIS & DAVIS, architects
A & O BUILDERS, general contractor

THE NO-CORRIDOR SCHOOL

Along with the architectural contract for Thomy Lafon went as tough a site problem as any school architect anywhere is apt to face: How to put a new 525-student elementary school on a 3.2-acre site *already being used by 2,200 elementary pupils!*

In the process of solving this corker the architects created a school that will be equally sensible and charming if and when it finally has the 3.2 acres all to itself (even the full site is small by all current standards for a 525-student school); and they devised economies and niceties that could appropriately grace schools with all the site room in the world.

The design is so economical ($10.30 per sq. ft.) that when bids came in last September, the school board found it could build the whole school at once instead of deferring construction of six classrooms for five years, as had been planned. Total construction cost was $432,000 against a projected Phase I construction budget of $400,000 and a total construction budget of $540,000.

Understandably, nobody likes to talk much about the *old* Thomy Lafon school. The models of the *new* Thomy Lafon do not show it. But the old school is very much present because the new Thomy Lafon is built partly on a 1.6-acre block into which two large and several small buildings of the old school had been squeezed, partly on an adjoining square of public playground and partly on the area formerly occupied by the street between the two blocks. To build the new school, the smaller buildings of the old school were razed but the two largest remain cheek-by-jowl with the new school. The old and new school together will continue to serve about 2,200 children, until the school village scheme absorbs about 1,700 children from this attendance district. Then the old school will be razed, and the new school will continue with only 525 students.

To cut down total building area and to make every possible inch of ground usable for play, the architects put the classrooms on stilts and did away entirely with a classroom corridor. Stairs from the covered play and circulation space beneath give access directly from the ground to each pair of classrooms above.

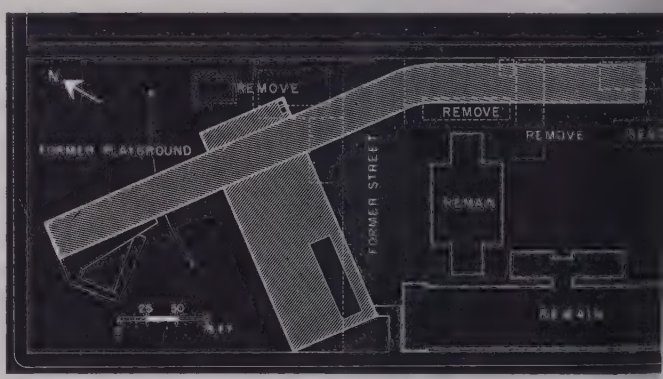
Now look at the by-products!

- Elimination of the corridor gives every classroom complete bilateral lighting and ventilation in the most direct, inexpensive way possible.
- The saving in corridor area helps make this a low-cost school.
- The stilts put classrooms upstairs, give them all an outlook without distraction from play areas or street.
- They give protected play space under the school for rainy days.
- They make it easy to keep classrooms cool and dry (and pose no serious heating problems).

Curtis calls the design "the logical step after the finger plan."

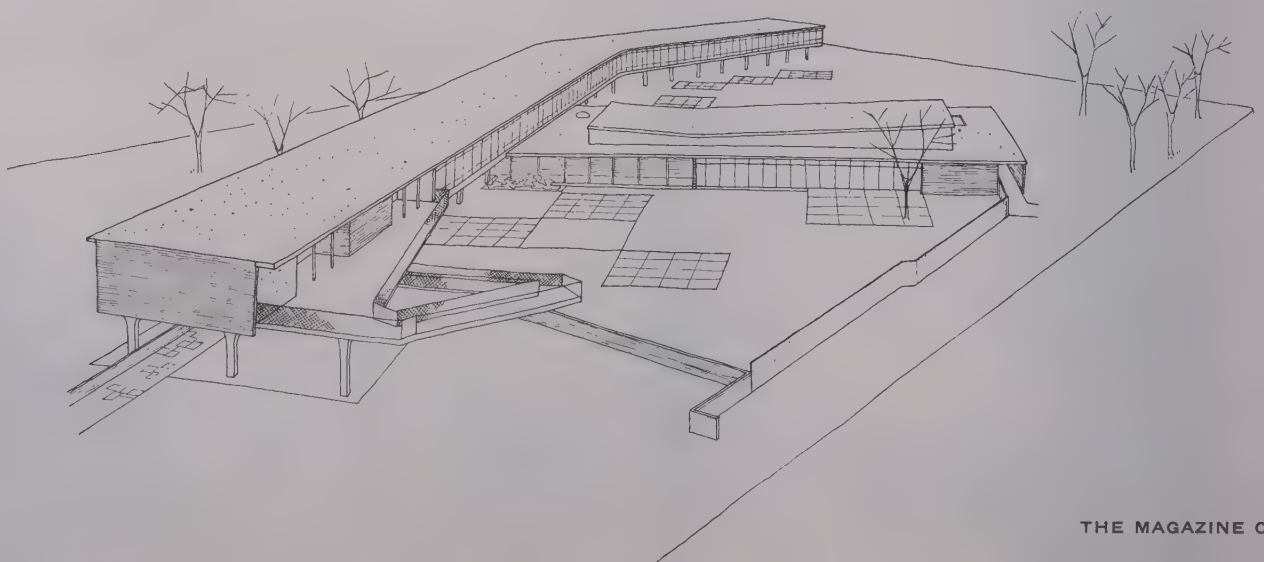
But do not stop after looking at the big ideas in this little school; it is crammed with details that merit close study too:

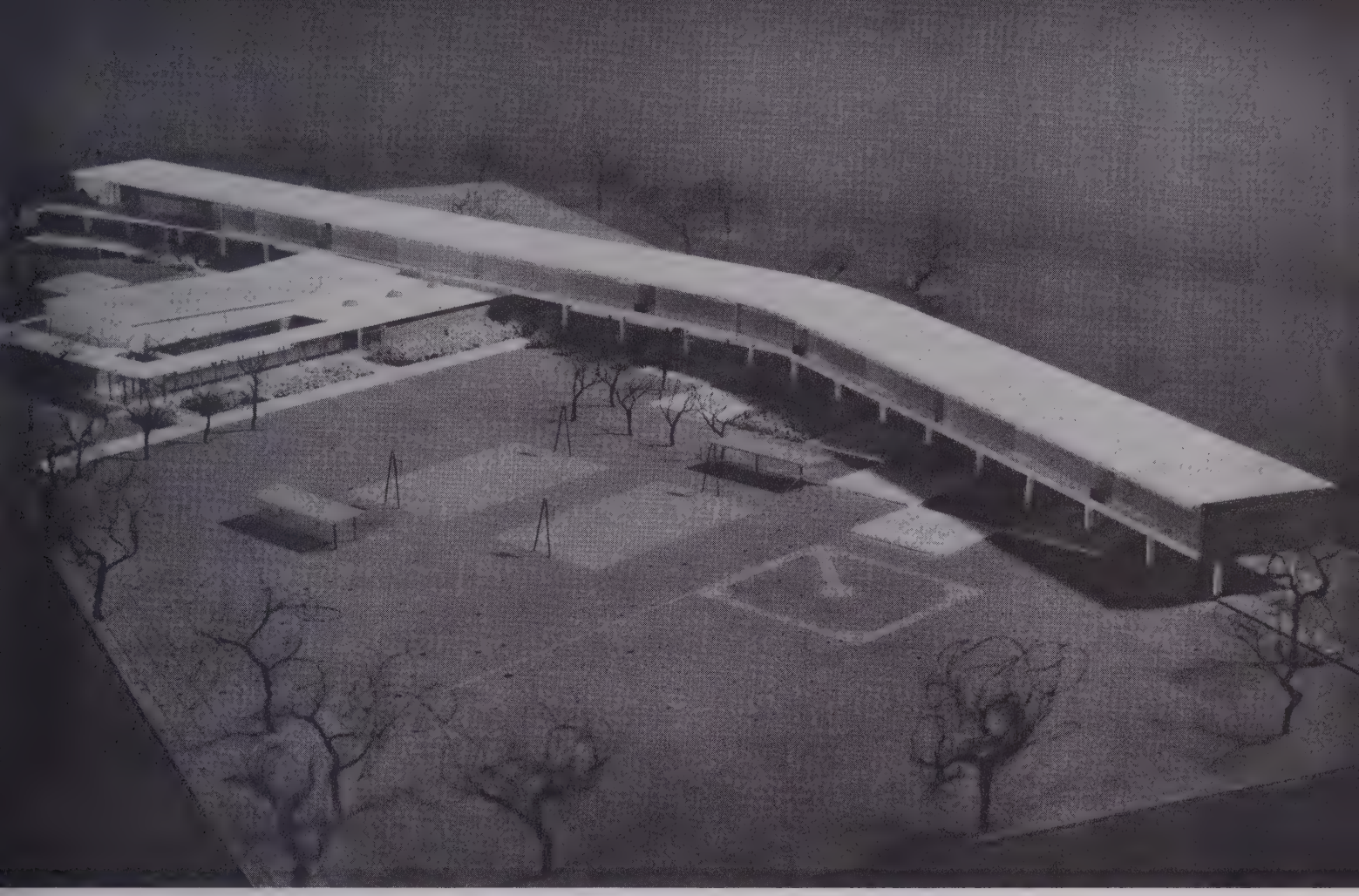
- Note the delightful upstairs play terrace and downstairs playground of the kindergarten, connected by a ramp that is sheer fun in itself.
- Note the way small patios and low outdoor walls give the ground-floor "community wing" a wealth of differing little vistas and nooks, a *niceness* that eludes many a more expensive schoolhouse.
- Note the varicolored paved terraces for outdoor classes; imaginative touches like this and like the climbing hill make endlessly rich play space out of a pocket-sized plot.
- Note (*section*) the neat way practical problems have been solved: the economical plumbing stacks, the unit heaters above stairs.



COST DATA

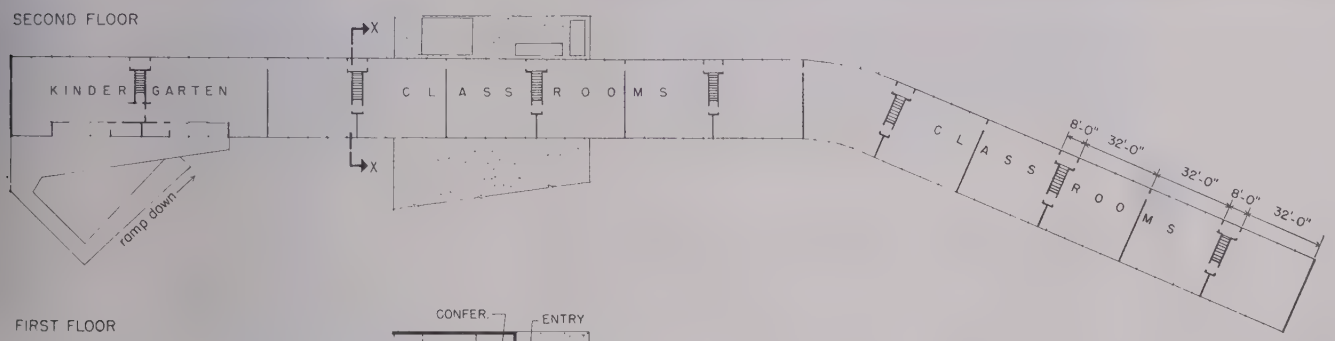
Construction total	$432,260.00		
Per sq. ft.	10.30	Per classroom (gross)..	$30,875.00
Per classroom (net) ..	12,617.00	Per pupil (gross)	823.00

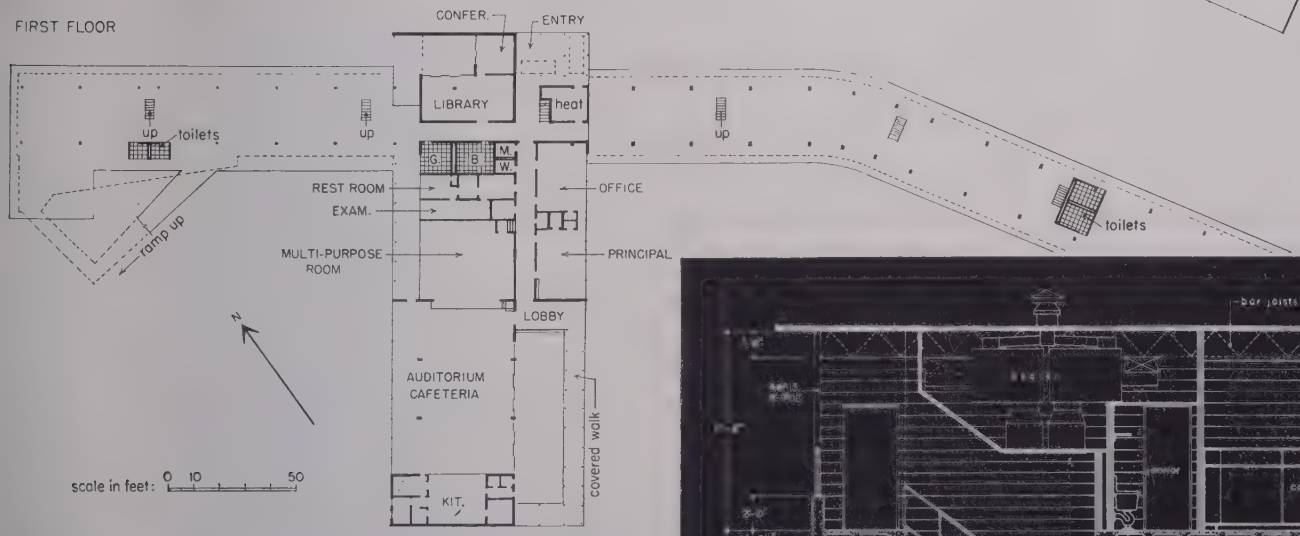


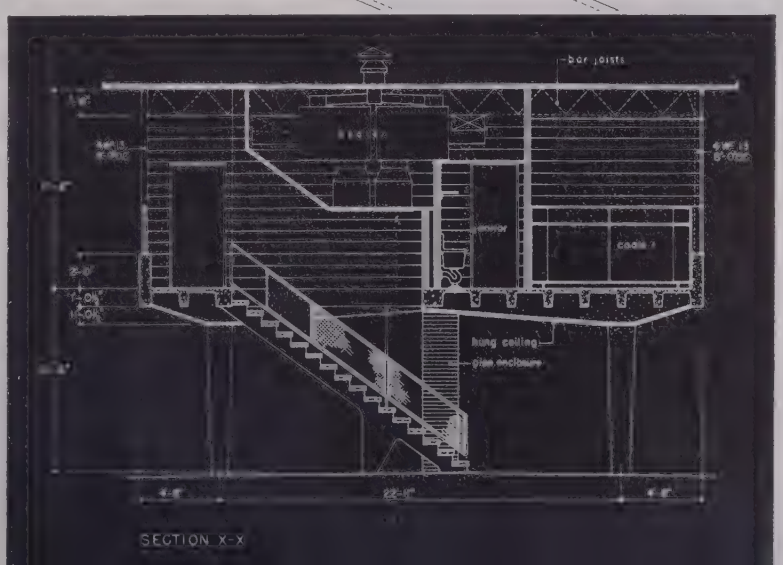


k Lotz Miller

School and grounds *as they will appear if and when the old school buildings now occupying foreground of site (see plot plan) are razed.*

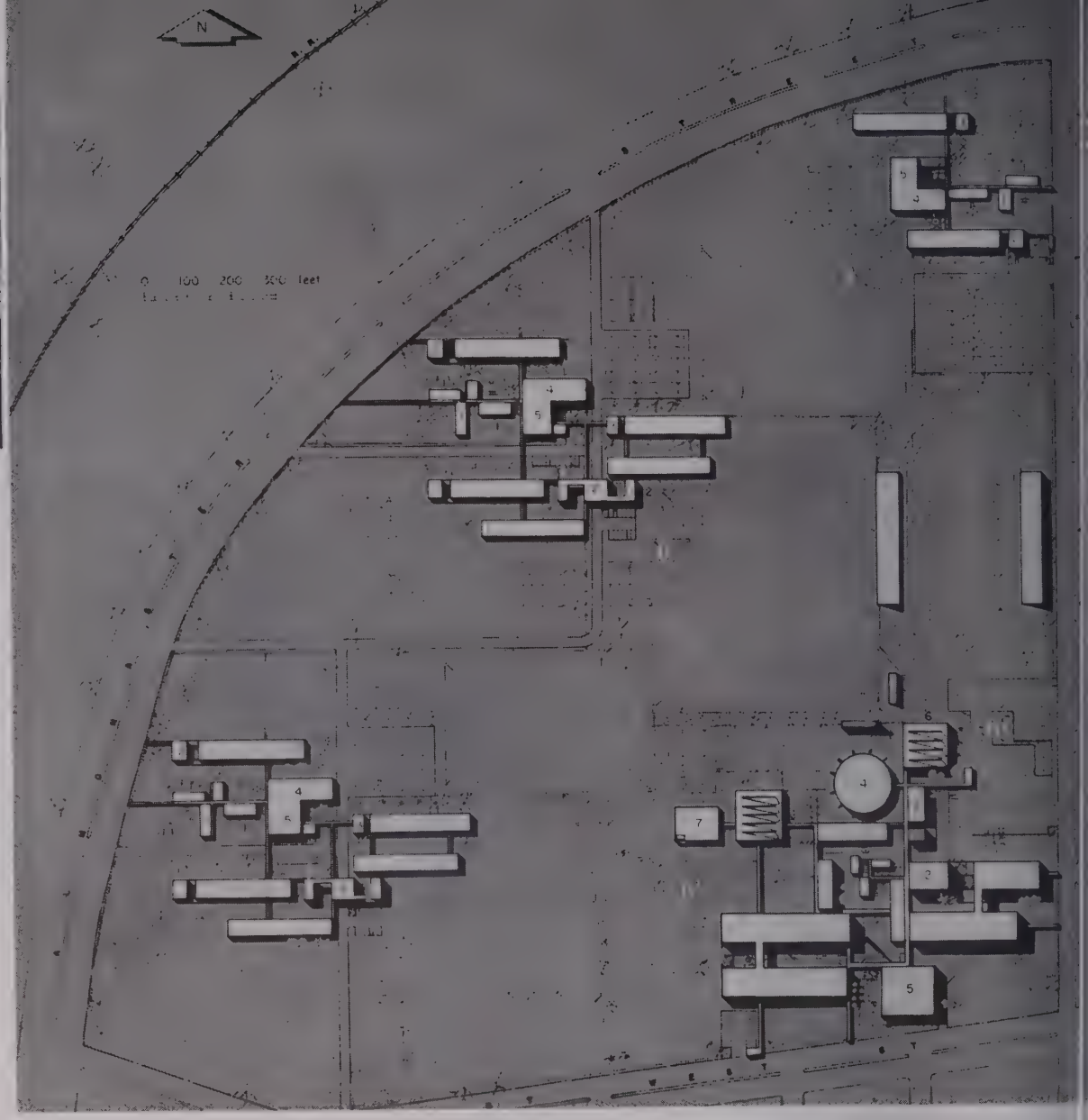






Ground floor *is "community wing" planned for broad use by neighborhood. Examination suite for instance will serve as community clinic.*





***Suggested design** of school village by Architect Colbert would make the most of its rural environment.*

A Elementary schools—1,000 students

B Elementary schools—1,575 students

C Elementary schools—1,575 students

D_1 Junior highs—3,000 students

D_2 High school—2,000 students

1. Kindergarten
2. Administration
3. Library
4. Auditorium
5. Cafeteria
6. Gymnasium
7. Play shelter

INSIDE THE SCHOOL VILLAGE

its 90 acres do the job of 115 in neighborhood sites; its land cost is $300,000 vs. $11,385,000 for city sites; its 11 schools will share 4 cafeterias, 4 auditoriums; it will be run like a university

The only thing wrong with the no-corridor Thomy Lafon school on the preceding pages is that its students are a drop in the bucket.

To ladle up the surplus children on the Thomy Lafon school site alone will require three additional schools, and before 1969-70 Back-A-Town will need 11 new schools, including a 2,000-student senior high. (These are in addition to three elementary schools under construction, a junior high on the boards and an existing senior high, all of which will continue operating in Back-A-Town after the school village is built.)

The 11 new schools for Back-A-Town require anywhere from 81 to 157 acres, depending on whose site standards are used.

Colbert figures that the school village's 90 acres in one spot are the "educational equivalent" of 115 acres dispersed in town because several schools can share common facilities—auditoriums, cafeterias, gyms, playing fields. Or looking at it more mechanistically: The National Council on Schoolhouse Construction figures on a five-acre base for each elementary school plus one acre for each 100 pupils. With eight 525-student schools coalesced into three groups, base acreage drops from 40 to 15, a 25-acre saving.

Colbert's preliminary site plan takes shrewd advantage of this centralization. He groups elementary units so three schools can share one auditorium and one cafeteria. Auditorium costs for elementary schools in New Orleans have been running between 6 and 7% of the structures. Colbert points out that one 525-student auditorium can adequately serve three schools; he figures on reducing auditorium cost to 2%. He estimates savings on all joint-use facilities for elementary schools in the village at $200,000.

In the secondary school group, the two junior highs will share one gymnasium (the senior high will have its own); all three secondary schools will share one auditorium, one cafeteria, the same facilities for science, arts and crafts, home economics.

Services—telephone, heat, maintenance, warehousing—will be centralized for the whole village and centralization will justify some facilities now lacking or inadequate in the school system: sight-saving classes, testing and guidance, classes for retarded, physically handicapped or brilliant children in the school village.

continued on p. 174

WHO PAYS THE PIPER?

will the community pay

—by losing the neighborhood schoolhouse

—by forfeiting its voice in school affairs?

will the children pay

—by losing the connection between school and "real life"

—by being submerged in a vast educational factory?

The love of money gets man into as much trouble as the lack of it. So it is only prudent to take our eyes off the high monetary costs of the city neighborhood school and look at the possibility of high nonmonetary costs in the school village.

It has become fashionable to call shifting anything to the suburbs "decentralization." But the school village idea, suburban or no, is centralization. It makes a homogenous big thing out of diverse little things.

It carries the potential (perhaps inevitable?) flaw of centralization: loss of "amateur" community participation, increase in remote and ingrown bureaucratic control.

Without benefit of school villages, the school systems of many of our big cities (including New Orleans) have already come to this pass. *The school village is the easy way out—perhaps not a way out at all—because it rides with the trend toward separation of community and school instead of attempting to reverse the trend.*

The entire American theory that local control of schools is "good" rests on the assumption that ordinary parents and citizens are interested in the schools, feel responsibility toward them, and are effective. To make this work in practice, the school system has to be interested in the whole community, feel responsibility toward it, and do something effective to become a vital part of it.

The New Orleans school board and Colbert know this well. The school as a servant of the whole community was a concept almost unheard of in New Orleans until the '48 fight over school architecture. In the last few years, the new board and Colbert's office have pushed the community role of the schools hard. They call "the lighted schoolhouse" the symbol of their new order and philosophy.

Thomy Lafon is beautifully and thoughtfully planned to serve its neighborhood (see plan, p. 133, for its "community wing"); its program shows both a sensitive and realistic appreciation of what a schoolhouse can mean to a Back-A-Town neighborhood with high illiteracy, disease, crime and delinquency rates and a present lack of almost any sort of meeting hall, banquet room, exhibit gallery, library and clubrooms.

What is to take the place of this concept of the neighborhood school in the other dismal Back-A-Town neighborhoods? The irony is that the school village idea should have come up precisely at the moment when New Orleans is on the verge of starting an effective "community schoolhouse" program. Says Colbert, "It's awfully embarrassing to unpreach what you have been preaching for four years."

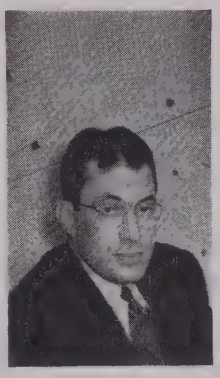
(The crowning irony, of course, is this: the unprosperous Back-A-Towners make such profitable tenants that land cannot be spared for amenities that come to less profitable neighborhoods.)

Colbert's transportation plan for the school village does include busses for adult activities. But there is no getting around it: the school village is inherently unfitted to play the easy, inti-

continued on p. 184



Leonard



Colbert

New Orleans' top-to-bottom school reform began with a woman and a battle over architecture

It started back in 1948 when Mrs. Jacqueline Leonhard (then Mrs. McCullough), 31-year-old freshman member of the school board, fought the shockingly outdated plans prepared by the board's staff for a new suburban school.

Jackie, as everybody calls her, teamed up with Charles Colbert (then assistant professor of architecture at Tulane and chairman of an AIA committee to survey school needs). They made 80 speeches in 60 days, drew huge crowds to model exhibits prepared by Colbert's students.

The board not only backed down, but shattered local precedent by announcing all schools would thenceforth be designed by practicing AIA members (AF, Feb. '51).

Up to this time Jackie had been low man on the board, nicknamed "four-to-one" by her friends. But at the 1950 elections, the citizenry, all hopped up over school design, elected two candidates backed by Jackie. One old member meantime swung to her side; it was "four-to-one" again with Jackie on top. One of the rejuvenated board's first actions was to name Jackie president.

Next, it pressed conservative School Superintendent Lionel J. Bourgeois for data on over-all needs. When he could not deliver, the board replaced him, called in Colbert to head a new planning office and started from scratch.

The board has since been overhauling, renovating and building at a great rate. Since late 1951 it has spent or earmarked $17½ million, plans to spend $14 million more through 1954. The 1955-70 phase—56 new schools—will cost $70 million, will have to come from increased taxes.

Far from frightening the electorate, this seems to be what it ordered. In 1952, after a hot campaign, two candidates backed by Jackie were elected and the last member of the old regime was gone. New Orleans now has not only a lively, but young board (its patriarch is 41). Jackie deprecates any thought that she won. "Contemporary school philosophy won," she says.

Jackie herself first got into the school battle because as an ex-reporter she was angry with the old board's star-chamber sessions, closed to reporters and plain citizens. She joined a women's committee to persuade "some outstanding, progressive citizen" to run for the membership at stake in '48, jumped in the race herself at the last minute when no other reform candidate came forward.

Jackie, "the kind of girl you take to a baseball game," spends evenings and week ends on school business, her days as salaried executive director of the Louisiana Society of Crippled Children and Adults, in between manages a sizable household to which she will add a third child in June.

Colbert left the Tulane faculty to associate with Architect Sol Rosenthal on two of New Orleans' first new schools, took over the planning post in March '51 and promptly proved himself a master at the maneuver of keeping one eye on today's renovation, the other on a 20-year vision and his finger on the public pulse.

School planners elsewhere would do well to look at his second annual report. It is a model because of the scope and selection of data and its clear organization of complex material.

Colbert resigned from the school post April 1 to resume private practice. His successor, Dan Martin, chief technician of the City Planning and Zoning Commission has worked closely with Colbert; policy will be unchanged.

Government 3¼% bonds seen as deliberate brake on building

The Treasury's new 3¼% bonds would dampen the 1953 boom in construction just as it began showing a strength that most forecasters had not expected.

Actually the April 13 offering involved only about ½% of the nation's outstanding debt. The Treasury offered $1 billion of marketable 30-year bonds for cash. It also offered to swap the new 3¼% securities for all Series F and G (12 year, 2.5%) bonds maturing between May and December, which may add another $1 billion to the issue.

Deliberate deflation. But in significance, the 3¼% bonds were a towering landmark of GOP fiscal policy. It was the first sale of long-term government bonds in an unpegged market in 12 years. The interest was the highest since 1933. It was a notable example of using public debt management to control credit. It was the Eisenhower administration's first major step to reverse Democratic cheap money policies. Basically, the issue was a consciously deflationary action which should reverberate throughout the US economy as it drives up the cost of borrowing. The big deflationary effect lay in the fact that the issue was designed to attract nonbank investors. Commercial banks that were the main customers for short term Treasury bonds would not buy many of the new ones: their funds must be more liquid. Getting the national debt out of bank hands is deflationary because banks use government bonds to expand credit.

The new issue was tailored to interest investors like life insurance companies, savings banks and pension funds. To the extent *they* buy the Treasury's 3¼'s, they will not be buying mortgages or making loans on commercial buildings.

The April 8 announcement of the 3¼% bonds took its place as a major date alongside March 4, 1951 when the Federal Reserve stopped supporting the government bond market. Its impact, however, would be faster and more drastic.

Temporary shock. For a few months, the 3¼% issue could well produce a drought in construction funds. Some experts figured institutions would invest most of the $1 billion in the next six weeks. But compared to a year's total public and private financing of about $30 billion, the $1 billion issue was not a major item.

To municipalities, the 3¼% rate gave new worries about financing school and other local public works construction. Many a city already was hard put to meet its budget. The certain rise in borrowing costs for municipalities would force some cities to retrench on building plans. But this should not show up in actual construction volume for six months or more.

First and hardest hit was the housing mortgage market. VA mortgages at 4% and FHA loans at 4¼% could not be expected to attract private money while Treasury bonds went for 3¼%. Cried President Manny Spiegel of the National Assn. of Home Builders: "This was the straw that broke the back of the VA and FHA mortgage market." (Indications were growing stronger, however, that the GOP high command would let VA and FHA rates rise to 4½% to keep step with other interest rates.)

Out of hand? In defense of tightening up, Ikemen pointed to evidence that the spring boom was in a little danger of getting out of hand. Consumer credit was rising. Homebuilding during the first quarter was 11% ahead of the same period of 1952 (see table). Commercial construction was up 44% (helped, of course, by the end of CMP restrictions). And industrial construction was providing the biggest surprise

NEW CONSTRUCTION ACTIVITY

(expenditures in millions of dollars)

Type	March '52	March '53	March % Change	1st 3 months '52	1st 3 months '53	1st 3 months % Change
PRIVATE						
Residential (nonfarm)	799	856	+7.1	2,194	2,434	+10.9
Industrial	202	198	—2.0	620	588	—5.2
Commercial	74	114	+54.1	232	335	+44.4
*Total	1,617	1,733	+7.2	4,597	4,939	+7.4
PUBLIC						
Industrial	114	115	+0.9	294	330	+12.2
Military	100	102	+2.0	276	302	+9.4
Residential	55	46	—16.4	176	136	—22.7
*Total	715	725	+1.4	1,997	2,064	+3.4
Grand Total	2,332	2,458	+5.4	6,594	7,003	+6.2

* Minor components not shown, so total exceeds sum of parts. Data from Department of Commerce and Department of Labor.

CONSTRUCTION EXPENDITURES for the first quarter of '53 were $409 million ahead of last year's first three months, or a gain of 6.2%. Public construction, still to feel the effects of the federal cutback order, was 3.4% ahead of the first quarter of '52. Private construction showed more than seasonal gains in March, pushed the boom in commercial building 44.4% ahead of '52's first quarter. The decline in private industrial spending narrowed to only 5.2% for three months, compared with 11% for the year's first two months.

IN THIS MONTH'S NEWS:

(see pp. 39 through 72)

Urban rehabilitation suffers a setback as leaders of Baltimore slum plan quit and Miami junks its slum clearance department

Commerce Dept. experts forecast the federal economy drive may cut federal building so much that '53 construction will drop 5% from last year's record levels

Congress wrestles with extending rent control right down to its April 30 expiration date

Urban Land Institute proposes divorcing housing from Title I urban redevelopment law

Associated General Contractors find sharper bidding despite booming business, elect C. P. Street new president

of all: instead of taking a nosedive with the virtual completion of defense plant expansion, it showed only a negligible 5% decline. And it was beginning to bounce back even from that dip.

Thus Eisenhower economists had a good case for dampening the boom now to prevent it from turning into a bust later. The tightness of money would bring a temporary paralysis to housing mortgages, and it would discourage a lot of building in the long run.

But the overall effect would scarcely do more than shade off the boom. The year's total construction might be down from 1952 levels—Commerce Dept. experts forecast this month that it would sag about 5%. But the chief reason was the federal economy program (see p. 40) which promised to take a really big bite out of military construction.

Los Angeles mayor loses election over public housing

Last year, although Los Angeles voters repudiated public housing by a sizable majority (59%), Mayor Fletcher Bowron continued to act in support of the city's proposed 10,000 unit public housing program. At one point, the rhubarb grew so heated Bowron landed a swing on a heckler (H&H, Oct. '52, News).

This month, as the mayor sought re-election to his fifth term, his opponents made public housing the chief issue—and won. For the first time in 20 years, a Los Angeles mayor running for office again failed to win a plurality in the primary balloting. The results:

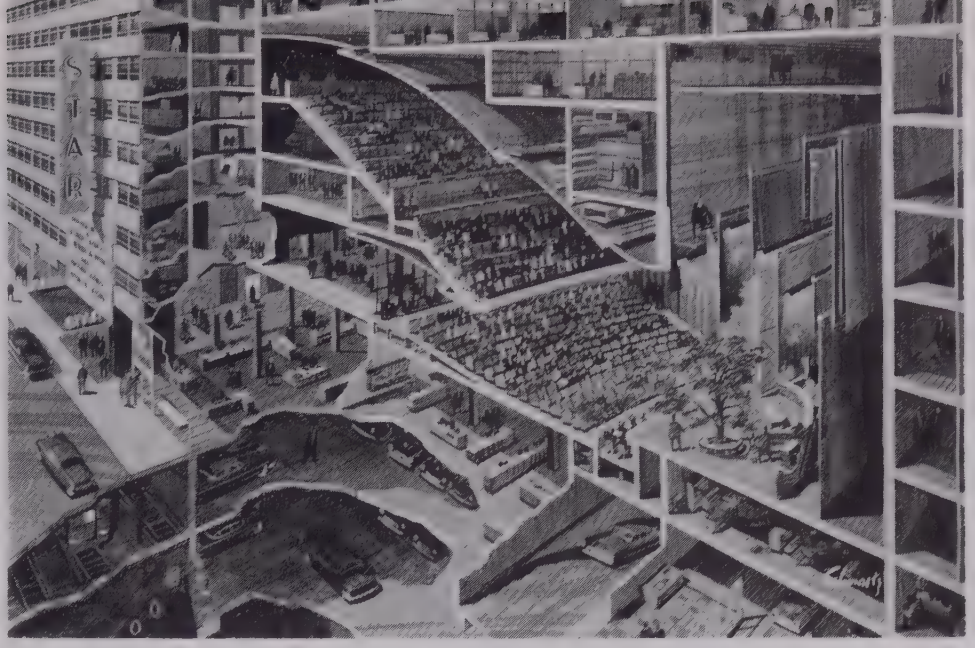
Rep. Norris Poulson (R, Calif.) 211,247
Mayor Bowron 178,362
City Engineer Lloyd Aldrich 70,459

When Aldrich threw his support to Poulson, Los Angeles politicos figured anti-public houser Poulson was way out in front for the May 26 general election.

Colorado gets new license law —and great confusion

Colorado's legislature enacted a new architect licensing law March 28, the last day before adjourning for two years. Whether it remedied all the defects of the 44-year-old law held unconstitutional by a court (AF, Jan. '52 et seq.) remained to be seen.

Biggest question: under the new law would the certification board license the dozen applicants whose rejection led to the suits? An attorney for several of them said the new law was so vague it might be unconstitutional, too. "It's just what you would expect of a bill jammed through the last days of the legislature," he cracked.

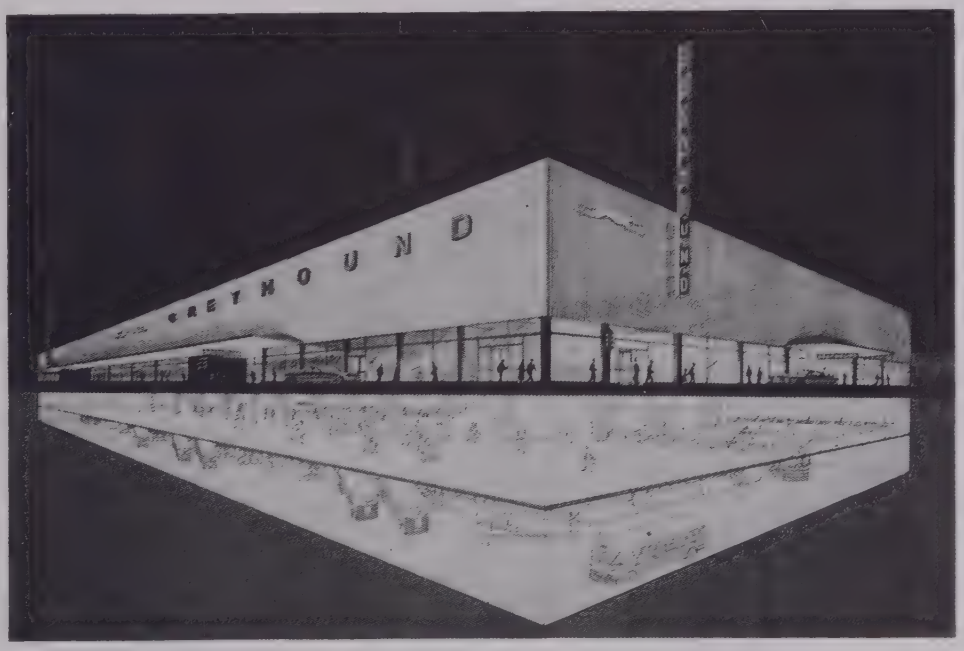


Multi-use theater building awaits New York code changes

If the curtain ever rises in a new and modern New York legitimate theater it would not be thanks to speed by the city council in approving code changes to permit theaters within other buildings. On the other hand, years of talk about such changes were mostly academic: no one had serious plans to build an office-theater.

Last month, however, Theater Angel Howard S. Cullman, who is New York's Port Authority chairman, said he and associates would seriously consider erecting a multiuse theater building in the West 50's theater district if the code was amended. They released a schematic sketch (above) to show construction features, including elevator service for balcony patrons, two-level basement garage, as planned for them by Architects Kahn & Jacobs.

Fire and building departments, the League of New York Theaters, and the AIA chapter executive committee had approved, but by mid-April Councilman Thomas J. Mirabile still had set no date for a building committee hearing on the necessary bills introduced in January. Recalling that New York's last new theater was erected in 1927, an exasperated editorial in the "Herald Tribune" begged for faster action: "The new theaters are needed right now—not another quarter century off."



Chicago gets world's biggest private bus terminal

Greyhound Corp.'s $10 million bus terminal in Chicago, abuilding four years and opened March 19, achieves the distinction of adding no load to traffic congestion in the busy Loop. As the cutaway sketch shows, buses load and unload from a concourse in the second basement. They depart through a 225' private tunnel to the lower level of Wacker Drive, one of the least congested streets in downtown Chicago.

The ticket office and waiting room fill the floor below ground level, freeing the ground floor for shops and restaurants from which Greyhound expects to earn about $600,000 a year. The second floor and roof, behind the facing of 24' high ribbed panels of 18 ga. stainless steel, is given over to public parking, with space for 500 autos. The foundations were designed to permit later erection of a 12-story office building atop part of the five-level terminal. Even without it, says Greyhound, it is the largest independently owned bus terminal in the world. Architects were Skidmore, Owings & Merrill.



Eight years of architect-owner teamwork

on the Hartford Statler pay off

with a better building at better costs:

HOTELS STATLER CO., INC., owner
WILLIAM B. TABLER, architect
SEELYE, STEVENSON, VALUE & KNECHT, structural engineers
JAROS, BAUM & BOLLES, mechanical engineer
GEORGE A. FULLER CO., contractor

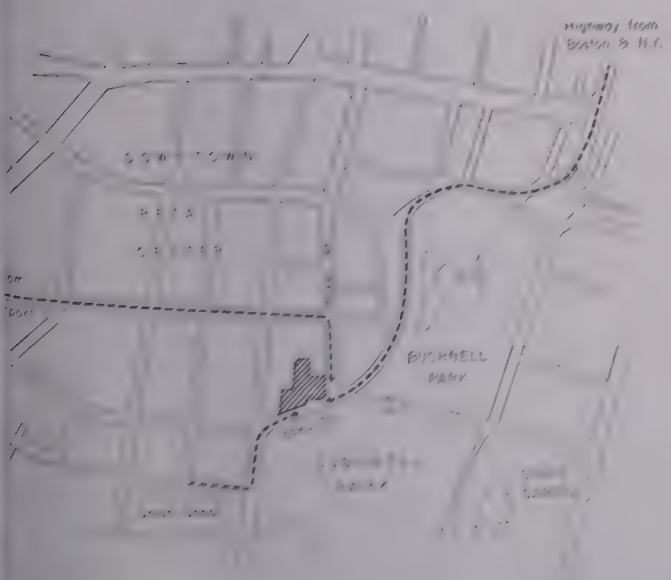
THE HOTEL THAT RESEARCH BUILT

Once in a blue moon a new building gets so much thought and study that all future planning in that building type is altered and many other building types are affected.

The new $5.2 million Hartford Statler is such a milestone. It will be years before anyone plans another hotel without studying in detail its traffic flow, floor layout, room design, space allocation, plumbing, lighting, engineering, structure and economics. This is a prototype small-city hotel, an experiment whose success may lead Statler to venture similar hotels in many other cities, and which still other cities will plagiarize on their own.

On 455 rooms for $12,000 a room, it will beat the construction cost of the 1,250-room Los Angeles Statler—and have, proportionately, bigger banquet facilities at that.

This is not a design story, although the design is highly acceptable. It is a planning story in which almost every detail is interesting because every detail is so carefully studied. And there are at least six good reasons why everyone interested in better buildings will wish to know more about this project:



Site has two-fold advantage: accessibility to both car and plane; a great deal of free landscaping in the park lying before it. Two-thirds of the 455 guest-rooms face the park. Photo shows park façade.

1. It is important for construction features which will influence not only hotels, but all other tall city buildings—viz. the thinnest (2″) curtain wall ever approved for a downtown tower, the deepest floor cantilever, the lowest floor-to-floor height, the shortest plumbing run, the most efficient minimum bath.

2. It is interesting (and perhaps important) for the way it borrows as well as pioneers—viz. the loft construction from Mies, aluminum framing covers from Belluschi, the glass and porcelain enamel wall from the GM Research Center, the open-ground floor court from Lever House, the split-level plan from the Los Angeles Statler, the immediate separation of overnight and in-and-out traffic from the best hospital planning.

3. It is fascinating for the way the most careful research was focused on what people, either guests or employees, will do or like —viz. 12 easy risers (7′) up to the cocktail lounge because 7′ is the most people will walk up without fussing; music in the elevators because experience has shown music reduces labor turnover; 34 rooms per floor because the maids' union won't let one maid do more than 17 rooms. And see p. 146 for the towel hook that will finance $100,000 worth of construction.

4. It is an outstanding example of building teamwork, with the owner providing the most complete research for problem analysis, the architect sweating out structural answers to those problems through months of study, the lender underwriting the entire cost, and the builder helping cut nearly $1 million from the budget.

5. It is interesting for the way the details of many other hotels were studied (including five other Statlers) to fix standards for Hartford a foot at a time, first to borrow and then improve the most efficient features and space use that could be found anywhere else.

6. But perhaps most important of all is the way this hotel was conceived from top to bottom as an integral part of its own operation, rather than as a shelter in which the operation could be housed. If this hotel makes money, it will be mostly because operating economies and maximum revenue per sq. ft. were planned into every detail.

If American business would grasp this concept of the building itself as perhaps the most important part of the production line, there would be less talk among owners about not being able to afford a new building, just as there is very little talk of saving money by using old machinery. This concept of the building as a cost-cutting, profit-raising tool offers the one best hope of keeping construction booming when the era of necessitous building ends.

The Hartford Statler results from the closest possible teamwork over an eight-year period between the Statler management and Architect William Tabler. The owner, for his part, made available the most detailed operating data from all his far-flung hotels and footed the bills for the extensive research, the mock-ups, and the planning and replanning needed to squeeze every inch of waste out of the project. The architect, in turn, has devoted all his time to working out solutions to his client's problems—first in collaboration with Holabird & Root & Burgee, whose associate he was on the Los Angeles Statler, now as sole architect for the new Statler hotels in Hartford and Dallas.

When Tabler tackled the Hartford Statler he was asked to abandon the axiom on which most other Statler requirements were based: no hotel of less than 1,000 rooms built to Statler standards could be profitable. Nevertheless, he was asked to meet almost all Statler's usual standards. The new hotel must provide a wide range of accommodations—which meant a variety of room sizes; it must break even at 60 to 65% occupancy; it must provide complete service—even an ice-cream plant; its net room area (excluding bath, foyer and closet) must be 50% of gross floor area; it had to include at least 10,000 sq. ft. of rentable ground floor space plus suitable dining room, ballroom, convention and night-club area.

To meet these requirements, Tabler had to 1) cut every space, from lobby to slop closet, to the acceptable minimum—actually scale down the entire operation to half the former 1,000-room minimum; 2) cut out all duplicated space and make single-purpose space do double-duty; and 3) solve a circulation problem created and intensified by the very integration he hoped to accomplish.

Planning highlights of the lower floors:

▸ Every possible foot of street frontage is reserved for retail stores, whose $43,000 rental payments will cover taxes and interest on the $503,000 site and so enable the hotel to live rent free.

▸ The sidewalk was curved in toward the entrance by special permission from the city, so cars can park off the street without crossing pedestrian traffic.

▸ Inside the hotel, room guest traffic is separated at the very entrance from restaurant or convention traffic. Room guests turn to the right, past the desk to the elevators. Others bear left up 7′ to the mezzanine.

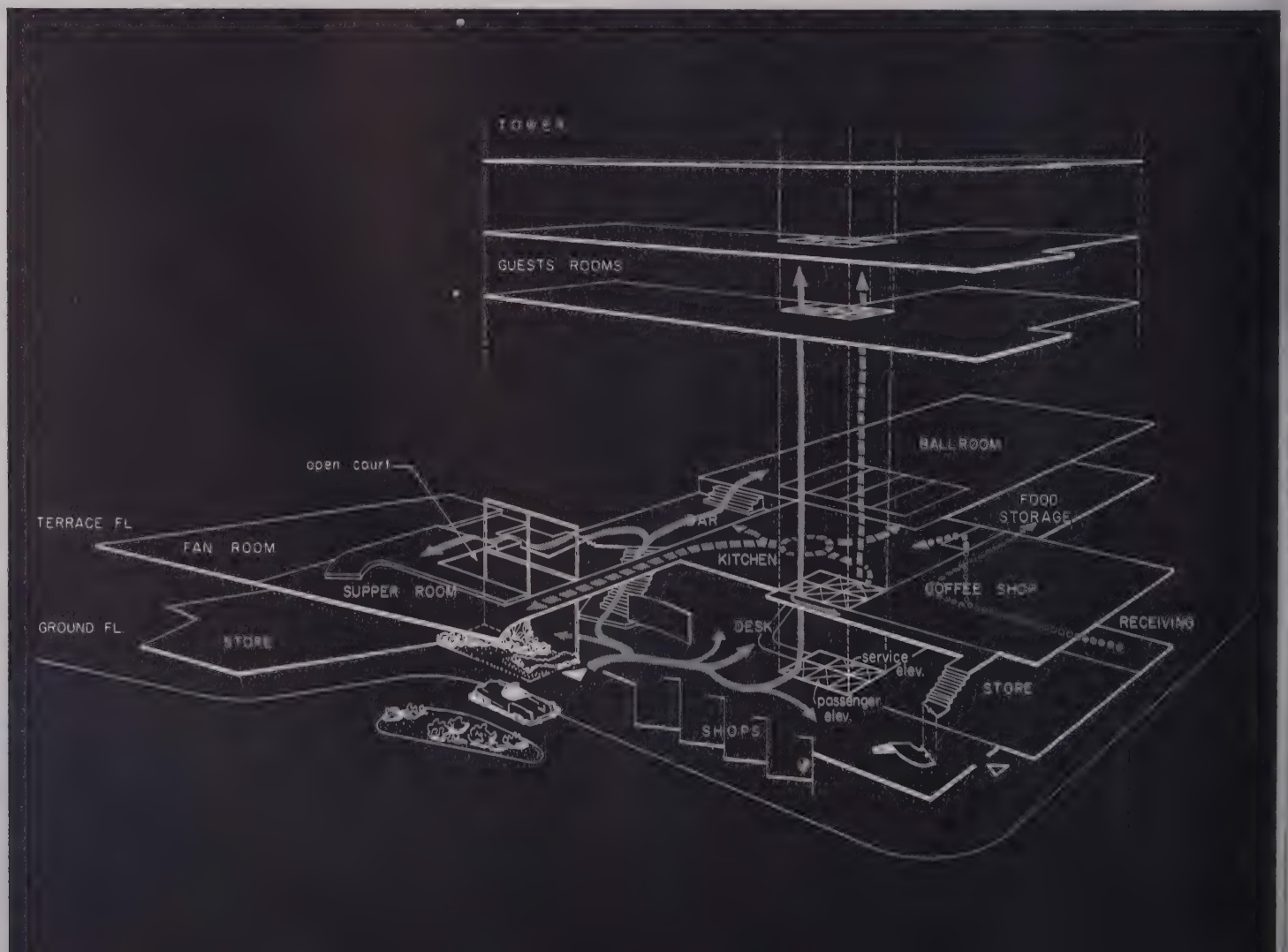
▸ One end of the tower was cantilevered 14′-6″ to extend sidewalk width and build maximum space above. This 14′-6″ cantilever was made economical by the very light weight (10 lbs. per sq. ft.) of the 2″ curtain wall.

▸ There are two entrances to the hotel—one for pedestrians at the corner, one for car passengers and pedestrians at the center.

▸ All restaurant, banquet and convention facilities are concentrated on the second floor, where they do not compete for more valuable street-level space and where they can all be served from one central kitchen (compared with 4 in the Washington Statler, 5 in the Los Angeles Statler, 4 in the Boston Statler). The Statler management believes this is the first 455-room hotel ever built to feed 1,200 guests at once from a single kitchen.

▸ Neither escalators nor elevators are provided for ballroom, convention, restaurant or bar patrons. Careful study showed patrons

Split-level plan *of public floors (exaggerated here) solves circulation. It divides traffic at door: guests bear right to desk and elevators, other customers bear left—and up in easy stages—to mezzanine bar, restaurant and ballroom. Most of ground-floor frontage is rentable store space. Elevator core is next to kitchen for easy room service. Laundry and refuse chutes in this core connect all floors with basement (not shown).*

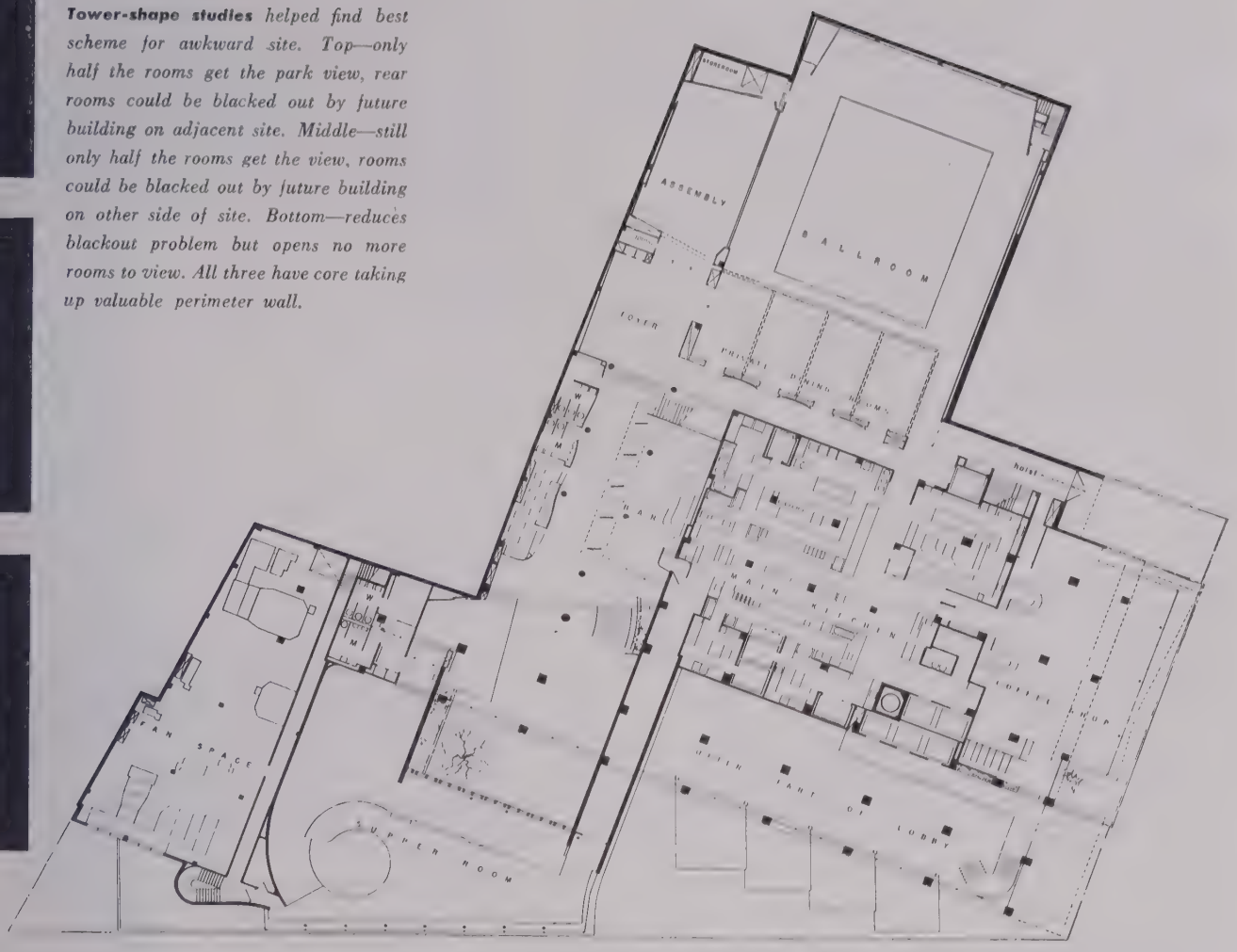


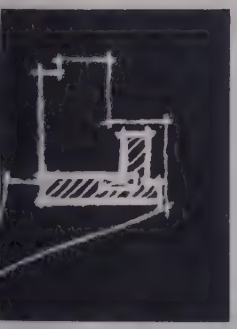






Tower-shape studies *helped find best scheme for awkward site. Top—only half the rooms get the park view, rear rooms could be blacked out by future building on adjacent site. Middle—still only half the rooms get the view, rooms could be blacked out by future building on other side of site. Bottom—reduces blackout problem but opens no more rooms to view. All three have core taking up valuable perimeter wall.*





Final tower shape *gives two-thirds of rooms a park view, offers maximum protection from future adjacent building and has core located on inside corner—the least desirable perimeter wall for guest rooms.*



would walk up without question provided they were lured up in easy stages. This explains the split-level open plan, with the mezzanine only 7′ above the lobby level, over a bar and flower shop depressed 5′. From the mezzanine other stairs hidden from the entrance climb 4′ more to the restaurant night club or 3′ to the ballroom.

▸ Only the coffee shop, principal restaurant for guests, can be reached directly by elevator. It is also served by stairway to the lobby near the pedestrian entrance.

▸ Segregation of guest and service traffic to the main dining room overlooking the park was solved vertically instead of horizontally. Food is brought from the kitchen on a bridge across the lobby over the incoming guests.

▸ The lounge area in the lobby, facing a fireplace and the court garden beyond the glass wall, is small but is no victim of space economy: it is intentionally small to discourage free-loaders from the street using it as a reading room.

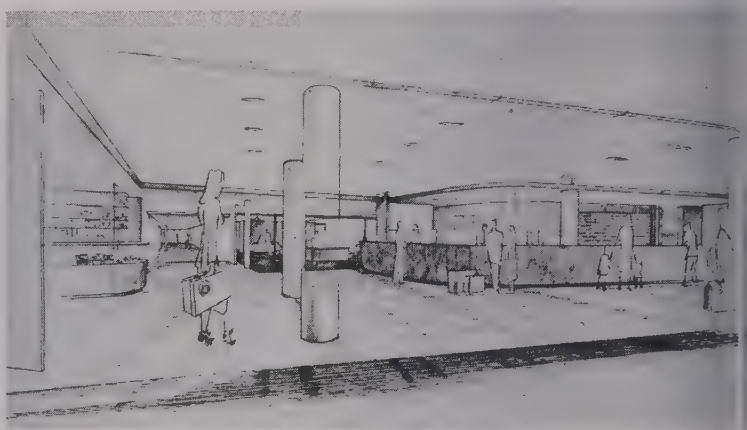
▸ The laundry chute drops linen from guest-room floors directly to the basement washing machines. Statler has found that hand-hauling laundry any distance runs the laundry into the red.

▸ The refuse chute deposits trash directly to the refuse room. Refuse is separated, and the paper is baled and sold.

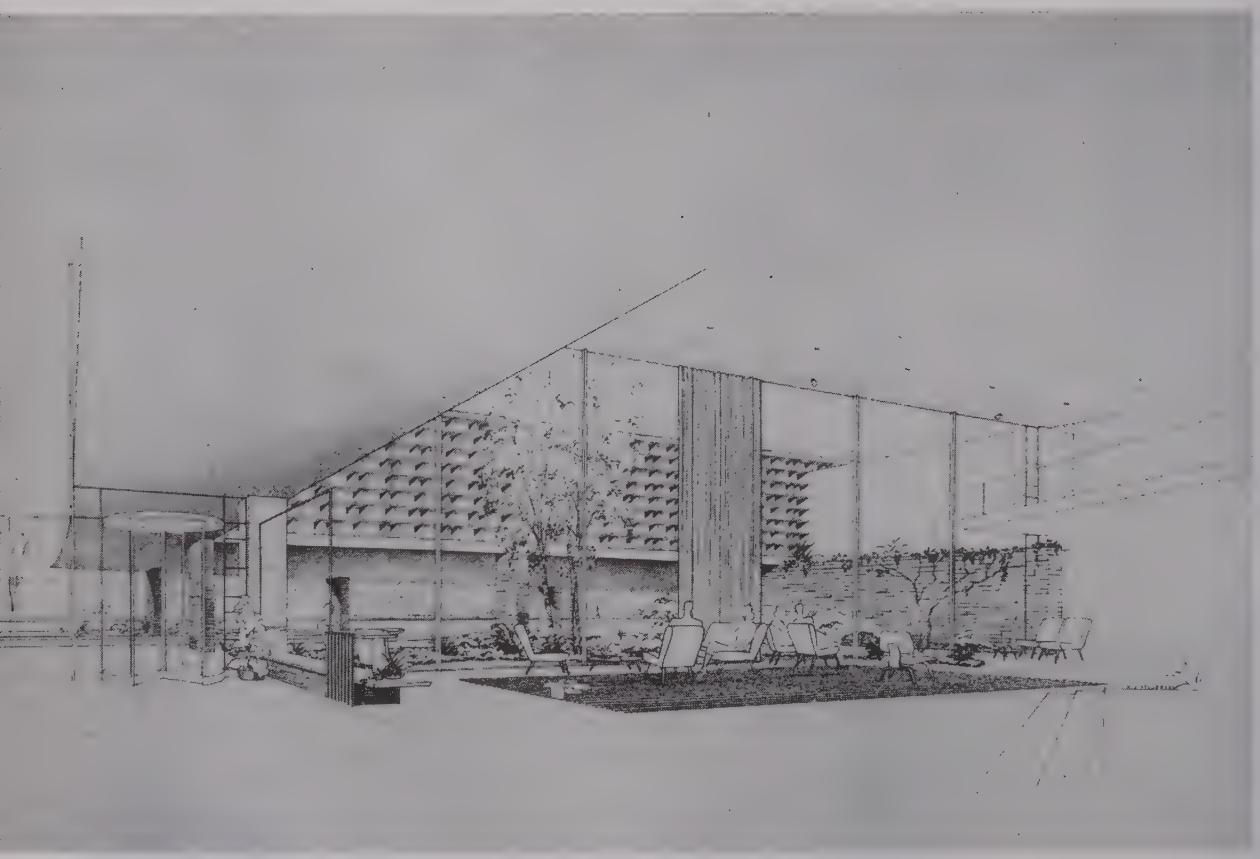
These and a host of other economies designed into every part of the building will make it possible for Statler to operate this Hartford hotel with an employe-per-guest-room-ratio of 0.8:1 compared with a ratio of 1:1 for all its other hotels.

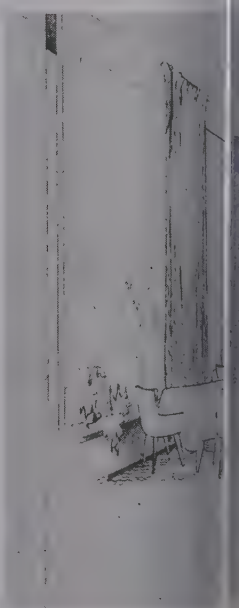


Main entrance *is set 50′ back of building line to remove lobby and lounge from usual mid-city sidewalk location. Service bridge and supper room extend over sidewalk, act as marquee for hotel.*



Inside main entrance *guests bear right to registration desk. Behind it are all administrative offices. Lounge is to the left.*





Garden court *between lobby and sidewalk is open to sky through well formed by service bridge, supper room and lobby walls. Textured marble screen wall of supper room has glazed openings, gives reredos effect.*

PUBLIC SPACES feature open planning, flexible partitions, dual-purpose lighting

To get the most out of the scaled-down public spaces at his disposal, Architect Tabler used four architectural tricks of the trade:

1. He treated lobby, mezzanine, dining-room foyer and adjoining circulation areas as one space. Low partitions, glass, screens and stairs are the only space dividers used.

2. He used height (two stories in the lobby) to tie the different levels together and an outside court open to the sky (à la Lever House) to add to the lobby height.

3. He used light to create depth on the ground floor and to join spaces. Highest intensity light is at the rear of the lobby over the desk and draws the entering guest to the back of the room. Cove lighting in the dining room is visible from the foyer and leads the eye deep into that area. The bar, well back on the mezzanine floor, is accented with light to add depth to that level.

4. He related all adjoining circulation areas by using similar finishes. To further the impression of a continuous flow of space, he kept a vista always before a guest going up or downstairs. Thus, guests going up to the mezzanine have 60′ of inviting space before them; those in the mezzanine or dining-room foyer see into the dining room or lobby below.

Ballroom. Instead of providing many separate rooms of different sizes for various kinds of gatherings as most Statlers have done, this one has only two big meeting rooms: ballroom and assembly hall. Individually they seat 600 each, but are easily combined to handle one large group. Along one wall of the ballroom are a series of small collapsible rooms for private meetings and dinners. Each can be combined with the others and with the ballroom to produce a total of 12 different space arrangements for functions of any size. (Folding partitions are two separate wooden panels with a 5¼″ air space between. Decibel reduction was so good [40] that test panels erected in the Boston Statler have been kept permanently.)

Analysis of all convention and private-party use of the Boston Statler for a peak month indicated that with this flexibility the Hartford Statler could handle more than 90% of the Boston Statler's private-party billing in one third the space, with great further economy because the tighter planning makes additional warming kitchens unnecessary.

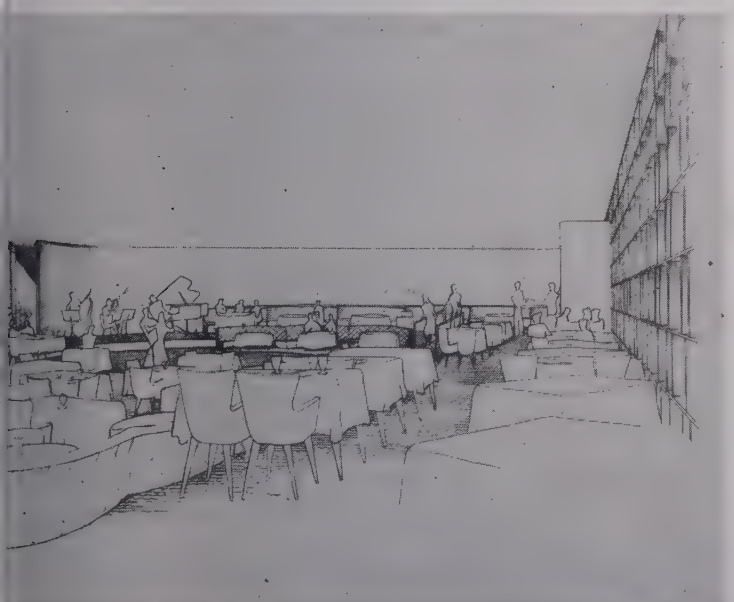
Ballroom lighting is elaborate. Cove lighting in three colors can be mixed to produce a spectrum ranging from white to deep purple. Ceiling floodlights are adjustable to light either the dance floor or wall displays.

Dining room. The main dining room doubles as a night club. Its second-floor front location gives daytime diners a view of the park, maximum daylight, and a feeling of great uninterrupted space. The window wall is the visual focus.

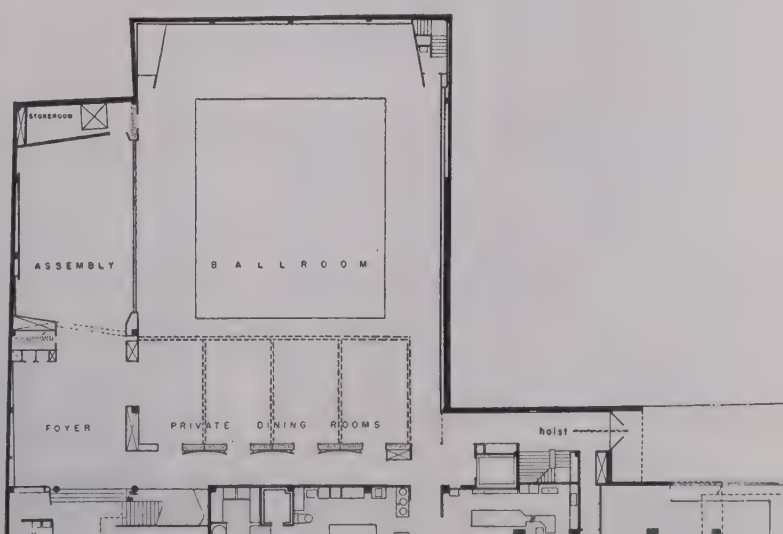
For night-club activities the big window is draped and the visual focus turns inward to a bandstand which is a continuation of the raised table platform at one end of the room. Now, with light, the intimate night-club atmosphere is gained. A cove light marks the end wall behind the band. General illumination is a subdued combination of baffled downlights and chandeliers of globes whose light can be dimmed or raised and played against spotlights.

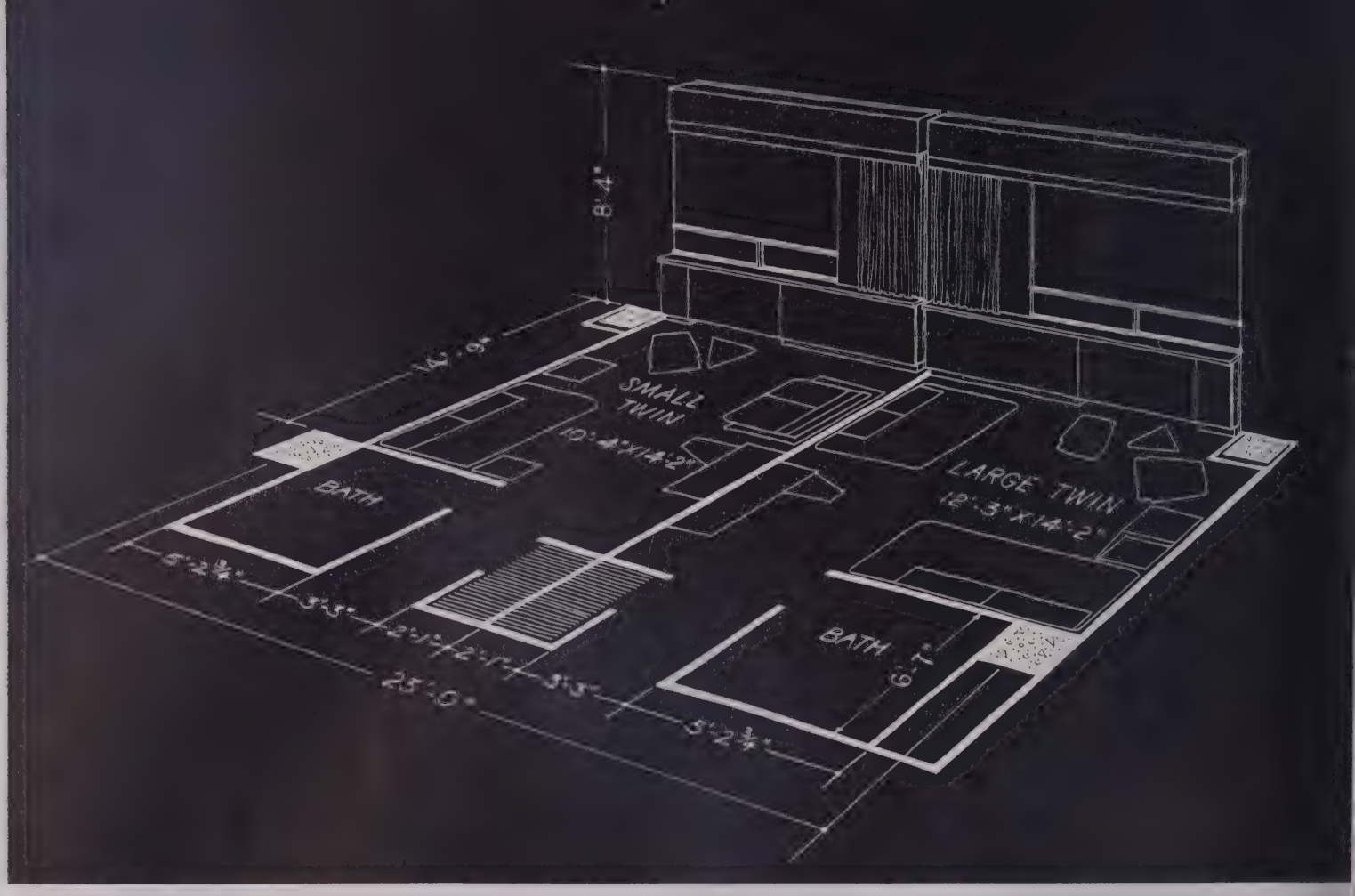


Supper room *during the day focuses on large window overlooking park. Nighttime focus is on dance floor and bandstand at far end of room.*



Ballroom *thrown completely open (above) will handle large conventions and dances. For smaller group meetings, collapsible walls divide the same space into four small rooms plus good size ballroom and separate assembly hall (plan, below).*





***Bedrooms** gain spacious feeling from single furniture group with beds on opposite sides of room and by emphasis of horizontal lines of stool, muntin and valance. Bay width (23′) is fixed by bath, foyer, closet and column widths.*

GUESTS ROOMS make the most of minimum space and a minimum budget

At Hartford, Statler wanted all rooms to pay their way equally on a square-foot basis (5¢ per day). Three factors affect a hotel's ability to reach this goal:

1. Demand for various-type rooms. To get an accurate estimate of demand involves a lot of intelligent guesswork. Among the things to be considered are: the character of the community—Hartford is essentially an insurance town; the average length of a businessman's stay in Hartford is four days; the fact that businessmen today frequently take their wives or entire families with them on trips; the fact that more and more families spend their vacations in hotels to get away from household chores.

2. Number of each room type to go on a typical floor. This is obtained by taking the demand for various types and dividing each by the number of projected guest-room floors.

3. Size of each room type. The minimum acceptable room sizes in the Hartford Statler came from an exhaustive cut-and-try method that had to be approved by the flintiest eye of the highest Statler brass. Mock-ups of each room type were made and officials inspected them rigorously to get the intangible "feel" of the space in each room. Only after this exhaustive procedure were minimum sizes set.

The next step, for the Statler officials, was simplicity itself: they handed their requirements to Tabler, said, "Go to work."

Here are their typical floor requirements:

	No.	Minimum size	Actual size
Singles	6	90 sq. ft.	96 sq. ft.
Doubles	8	130	138
Large twin ..	12	170	191
Small twin ..	7	150	150*
Parlor	1	250	410

In addition they wanted to be able to suite the following combinations of rooms: 1) two large twins, 2) large and small twins, 3) double and large twin, 4) parlor and double, 5) parlor and large twin. Tabler produced the five two-room combinations plus another two-room suite, two three-room combinations and a de luxe, four-room suite.

* Folding bed in "small twin" permits smaller room and makes this room rentable to either a single businessman; a couple or a family of three.

Typical floor. With the room requirements fixed, Architect Tabler was faced with the problem of getting the wide room variety in a simple, economical tower that would not complicate the structure or the mechanical work.

First step was to find a bay size of two rooms that would meet the minimum room-size requirements. From previous studies, the bay dimension along the corridor was automatically set: Minimum bathroom width, foyer width and closet depth were known. Multiplied by two (for a two-room bay) they totaled 23′ and represented the dimension between column center lines along windows.

This left two variables to work with to determine the required room sizes: the bay depth, and the location of room partitions on either side or in the center of the bay girders. Bay depth along the front of the tower was fixed at 15′; along the back, at 12′-6″. Corridor width (6′) was figured on the module of standard carpet looms (9″) to eliminate carpet waste and save cutting costs.

One departure from the two-rooms-per-bay axiom occurs twice on each floor to give

six minimum single rooms or roomettes. Reason: Insurance companies in Hartford run training courses of several weeks' duration and these roomettes answer the demand for minimum-cost accommodations for "students."

Ceiling heights were fixed by the cut-and-try method to find an acceptable minimum. It was found that 8′ was too low, while 9′ actually made small rooms feel smaller by accenting the narrow dimension. Final floor-to-ceiling height came to 8′-4″ which, with the 5″ concrete ceiling slab, gave a floor-to-floor height of 8′-9″ (compared with 9′-6″ in both the Washington and Los Angeles Statlers).

Bedroom cost and space economies:

▸ Ceilings are spackle-finished instead of plastered.

▸ Baseboards are asphalt tile instead of metal (they'll withstand nearly as much hard use as metal, are less costly to repair).

▸ The ventilating grille in the bathroom door is omitted and the door under-cut 1″ for ventilation.

▸ The closet wall is stopped 5″ short of the ceiling and an incandescent bulb in an inexpensive porcelain fixture (hidden from view) supplies cove lighting to the foyer as well as direct light to the closet. Added advantage: if the bulb burns out the maid can replace it.

▸ Three baseboard plugs are so spaced around the walls that no more than 5′ of cord is needed to place lamps anywhere along the room perimeter. Fixed lights are not used because they freeze furniture location and cause the carpet to wear out in spots. (And all switches are noiseless—a switch clicking at 3 A. M. can be heard all down the hall.)

Analysis of costs went to such lengths that Tabler knew it would be cheaper to use a plaster stool face than leave it open and pay for carpeting to go the additional 10″ to the wall!

To make the rooms appear larger a host of psychological tricks were used. Examples:

▸ Twin beds are placed on opposite sides of the room (instead of in a corner with table between the heads) and chairs and table are arranged to make the room one large grouping instead of splitting it into sleeping and sitting areas.

▸ All horizontal lines on the window wall are emphasized. Thus the stool runs uninterrupted from wall to wall as does the valance over the window. A muntin separating the fixed and movable lights furthers the horizontal treatment and acts as a psychological railing to reduce fears guests might have about falling out of the wide, high window.

▸ The drape is stopped at the stool to save costs of material and to keep it from becoming a strong vertical element in the room.

▸ Window head and door heights are identical (6′-8″). Stool height (29″) matches table height.

▸ All furniture is scaled down to fit the room.

▸ The closet is stopped short of the bathroom on the room end of the foyer, adding space to the room proper.

▸ Continuous carpet makes the floor an unbroken plane.

▸ There is no overhead downlighting to lower the apparent ceiling height.

▸ Mirrors are used on side walls to "widen" the room and opposing walls are painted different colors to increase this feeling of spaciousness.

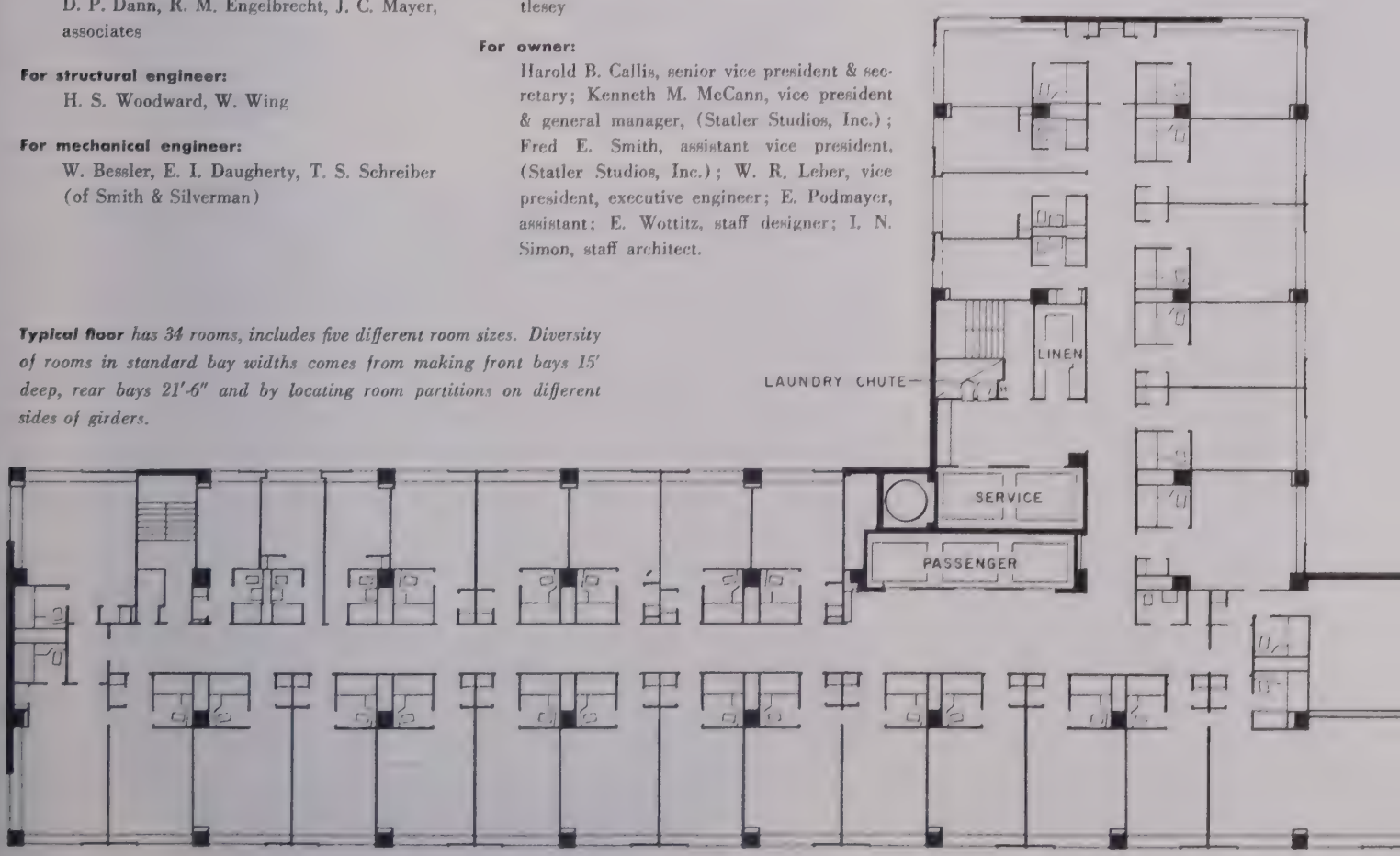
For architect:
H. J. Stojowski, designer; J. B. Robinson, D. P. Dann, R. M. Engelbrecht, J. C. Mayer, associates

For structural engineer:
H. S. Woodward, W. Wing

For mechanical engineer:
W. Bessler, E. I. Daugherty, T. S. Schreiber (of Smith & Silverman)

For contractor:
Neil Horgan, H. W. Dobson, R. B. Whittlesey

For owner:
Harold B. Callis, senior vice president & secretary; Kenneth M. McCann, vice president & general manager, (Statler Studios, Inc.); Fred E. Smith, assistant vice president, (Statler Studios, Inc.); W. R. Leber, vice president, executive engineer; E. Podmayer, assistant; E. Wottitz, staff designer; I. N. Simon, staff architect.



***Typical floor** has 34 rooms, includes five different room sizes. Diversity of rooms in standard bay widths comes from making front bays 15′ deep, rear bays 21′-6″ and by locating room partitions on different sides of girders.*

BATHROOMS anticipate guests' habits, boast new fixture designs

Here is the best-thought-out hotel bathroom yet built.

It measures only 4′-10″ by 6′-7″ (inside dimensions) yet is a full, two-passenger bath. Building on lessons learned in the Los Angeles Statler it uses that hotel's painstakingly worked-out design. In the Los Angeles bath, the water closet is turned several degrees off its usual axis for three good reasons: 1) it permits the door to swing into a narrower room; 2) it permits an alternate door location in the end rather than in the side of the bath; 3) it serves as a seat for the make-up shelf and mirror.

To make the compact bathroom seem larger, the medicine cabinet is outsize and wall mirrors visually extend the space.

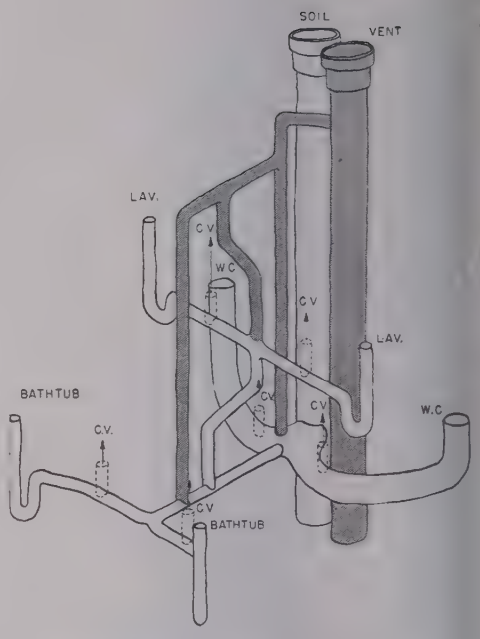
Habits of guests and maids were considered in the design to cut operating and maintenance costs materially. For example, shower-curtain tracks, recessed in bathroom ceilings in the Los Angeles Statler, are dropped to a reachable level. Reason: lady guests complained in Los Angeles that they had no place to hang stockings to dry.

If a towel hook is handy—and one is here on the bathroom wall—Statler has discovered that a guest will normally use a face towel four times instead of once. Result: Laundry savings of 4½¢ per day in 455 rooms equals $20 a day or $7,300 a year—enough to pay annual capital charges on $100,000 worth of construction.

Stoppers on chains are used because mechanical stoppers get clogged and maids refuse to clean them; then an expensive plumber has to clean the trap. Maids will clean drains under chain stoppers. Incandescent light is used to permit maids instead of maintenance men to change bulbs.

Fixture design insisted on by Statler may well add new and improved units to maker's lines. Examples: 1) The water-closet seat cover covers more of the bowl than standard models, serves better as a seat. 2) The one-piece vitreous china sink-vanity shelf pioneered in the Los Angeles hotel is used here. Instead of a hard-to-clean joint between the usual plastic shelf and china basin, there is one continuous surface. 3) The medicine cabinet was built to Statler's specifications. The back of the cabinet behind the shelves is a removable access panel to plumbing. A perforated shade (hinged at the back for easy bulb replacement) over the incandescent light keeps all light down where it is needed. Precisely angled louvers of the towel shelf below the bulb direct light out onto anyone in front of the mirror. The electric-razor outlet is placed on the lower part of the cabinet instead of near the top. A removable razor-blade receptacle has a built-in bottle opener.

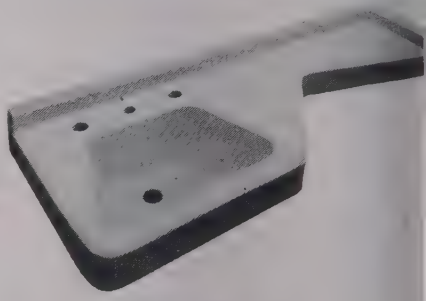
Plumbing savings are great. One standard pipe shaft serves two baths (compared with only 53% of Washington's many nonstandard pipe shafts). As a result of meticulous planning with plumbing engineers, Statler was able to single-vent each pair of back-to-back fixtures (diagram r.) and thus save nine fittings and 10′ of pipe (plus labor costs) for each pair of bathrooms. Another plumbing saving came in using only one vertical air chamber for each bath. Each Hartford bath requires 50′ less pipe than Washington Statler baths, 15′ less than Los Angeles Statler's. The saving is $100,000 over conventional layouts.



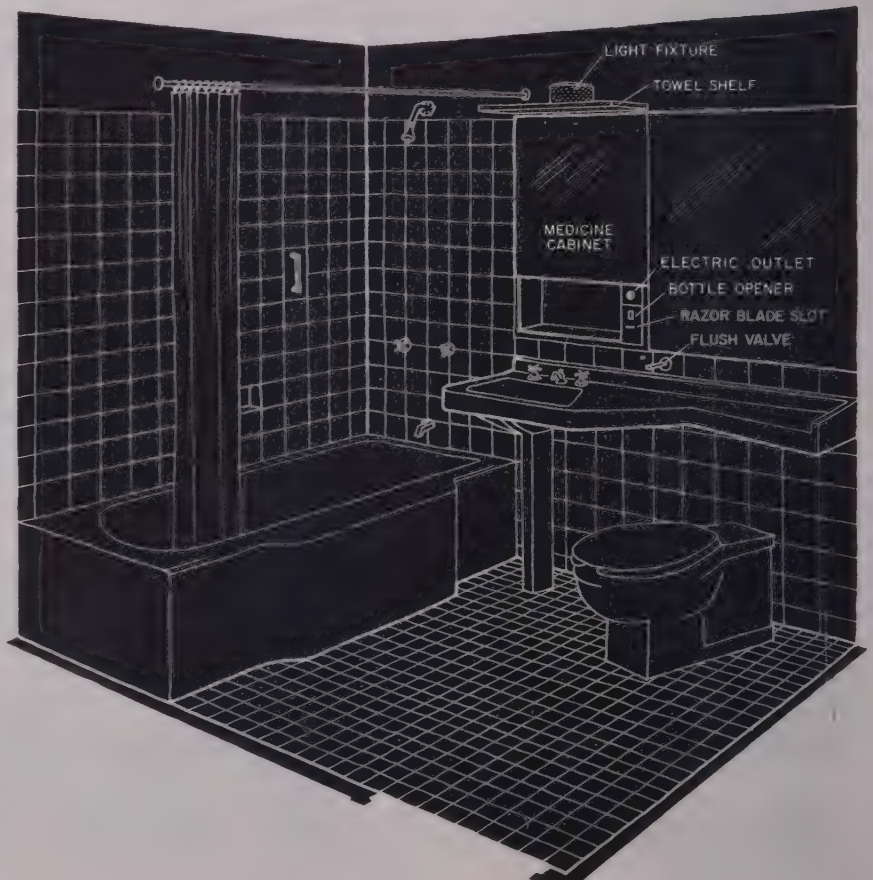
***Plumbing stack** in Hartford hotel is simpler than Los Angeles Statler, uses 15′ less pipe. Major simplification: use of single vent for each pair of fixtures as opposed to conventional venting (designated as "c.v." in diagram below) of each fixture.*



***Medicine cabinet** was tailor-made, has many improvements, costs no more.*



***Vanity-basin** of one-piece vitreous china banishes troublesome joint.*



STRUCTURE: 2″ curtain wall and glass hung on a concrete frame

The first 2″ curtain wall on any tall US building will enclose the Hartford Statler. (The Alcoa Building has a 7″ wall; the Gateway Center buildings, 5½″ walls.) It is a glass-fiber sandwich with 20-gauge metal (porcelain finished) on the outside and asbestos board on the inside.

Here are other comparative statistics:

	WT./SQ. FT.	COST/SQ. FT.	U
ALCOA	40 LBS.	(not released)	.16
GATEWAY	42.5	$6.80	.23
STATLER	10	$5.10	.20

Cooperative city building officials gave the Statler the green light for this curtain wall by ruling that the 25″ depth of the spandrel beam meets the code's requirements for exterior fireproof wall area. Result: the window and 2″ curtain wall cover the 140 sq. ft. area defined by columns and spandrels.

Clear glass occupies two-thirds of the room width and is built into a prefabricated aluminum frame. Two transom lights open for ventilation across the bottom of the window. Above, the window is fixed—or rather locked shut. For washing, the window can be unlocked and swung in and both surfaces cleaned from inside.

The window stops short of the room width because drapes, even when drawn back, would obscure part of the glass and sun fading would raise maintenance costs. Moreover, the substitution of curtain wall for this glass saves a big 25% on air-conditioning requirements. On the inside, the window will be shaded with Venetian blinds in addition to full-drawn drapes, because Statler has discovered businessmen who must sleep during the day cannot get the room dark enough with just the blinds.

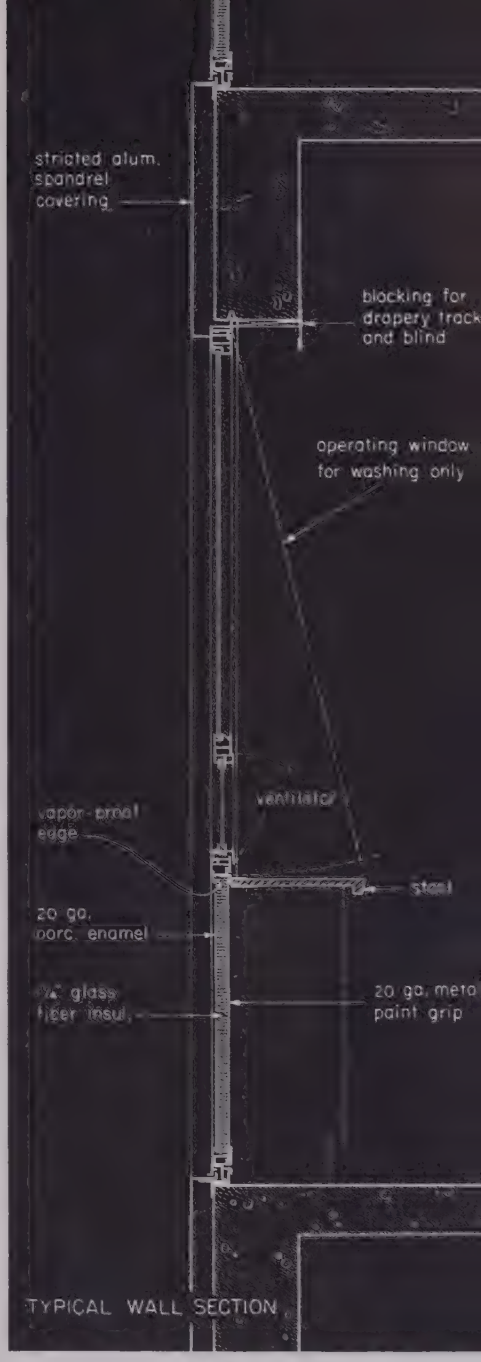
The aluminum framed wall units are built on a module of three to a bay to reduce shipping and erection problems. Two of the sections have the windows incorporated in them, while the center one is entirely wall.

To get bids on both steel and concrete structure, the building was designed on the familiar post-and-beam principle. Steel in place and fireproofed was bid at $1,600,000 while concrete came to only $1,000,000—and the issue was settled. (So well settled in fact that in designing the Dallas Statler, this versatile material will be used to get rid of all exterior columns. There, floors will be cantilevered 8′ beyond columns all the way around.)

In Hartford one end of the tower is cantilevered 14′-6″ over the sidewalk, another is cantilevered 12′ over the service drive to free it of columns. Structurally, these cantilevers would have had to be much deeper if they had to support a regular masonry wall (75-100 lbs. per sq. ft.) instead of the light (10 lbs. per sq. ft.) curtain wall.

Column and spandrel beam facing is of minutely fluted aluminum—to avoid the tin-can effect of smooth metal surfaces. Column sections are hung easily from two bolts in the column and the lower end slipped over a lip section below to form the simplest kind of expansion joint. There is no welding or bolting to mar the finished surface of the facing.

The long span roof over the supper room has beams reversed with the concrete slab hanging beneath them to simplify ductwork in the hung ceiling below and to keep the finished ceiling as high as possible.



COST CUTTING: teamwork and sharper pencils save $1.2 million more

Despite all efforts to keep costs down, bids came in 23% over the $5.2 million budget. To cut $1.2 million the builder, engineer and architect put their heads together, saved $800,000 on mechanical items, the balance on design modification.

The builder took over much of the buying and got better prices than on initial bids. Reason: with a signed contract in sight, suppliers began to talk turkey and compete with each other for the jobs.

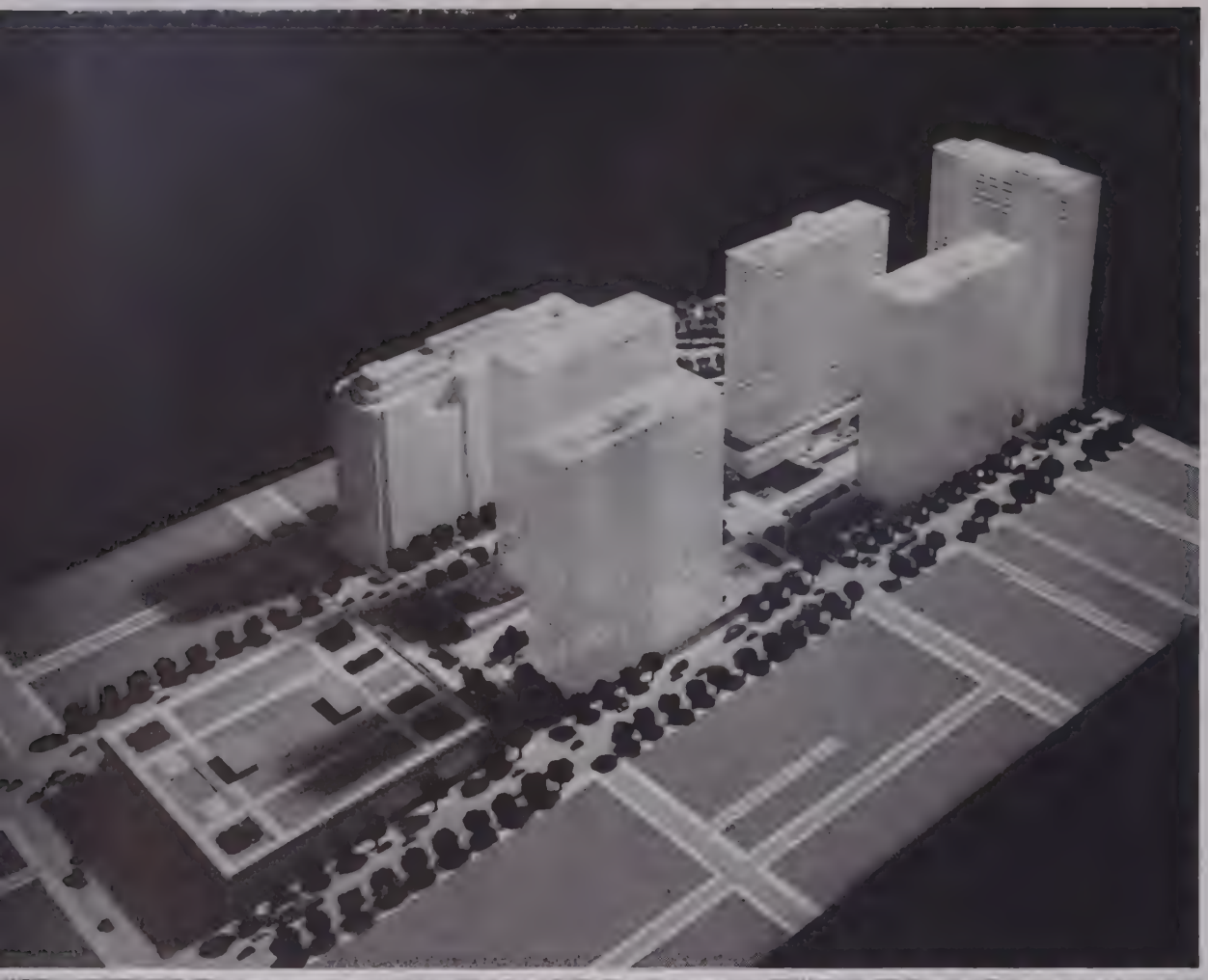
The engineers sweated mechanical and structural details down to the bone: preheat coils in the basement ventilating system were eliminated; fresh-air inlets were omitted (because guests will open the windows and let in air); the 540-ton air-conditioning system was reduced to 480 tons by counting on wider load distribution; package boilers were used in place of job-built ones. By such methods $370,000 was cut from heating and air-conditioning plant alone.

A steel water tower was abandoned for two wood ones. They are more easily built, require no maintenance—and cypress will last as long as steel. By the time the engineers got through they had brought mechanical costs down from 49% of the building total to around 33%—a major achievement.

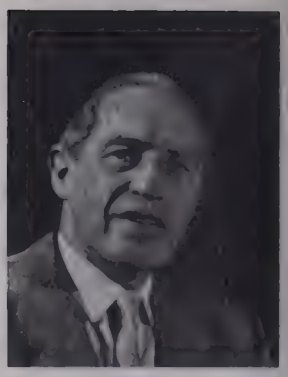
The architect changed many details. Examples: Asphalt tile baseboards in closets gave way to a painted line, saving $7,000. Plaster over room window heads and under spandrels was replaced by spackle finish and the cornice was simplified: $20,000. The stool frame in rooms was simplified: $40,000. The plaster stool-top width (11⅞″) was precisely figured to get two tops from one stock width (24″) with one saw cut: $15,000.

Trimmed to the budget, the hotel is now rising in Hartford.

Photos: Lawrence S. Williams; Aero Services; © Ezra Stoller







Robert W. Dowling

Dowling's proposal *is a structural filling for the present cavity in Philadelphia's central business district made by Pennsylvania Railroad track yard and old Broad St. Station (City Hall Tower is to right in photo below, left). New building group will contain four tall, thin office slabs, a similar hotel and a two-story central shopping mall at street level and below. Situated next to City Hall Tower, site is easiest place for most people to get to by present rail, subway and bus facilities.*

Edmund N. Bacon



Bob Dowling climbs Philadelphia's Chinese Wall

Better architecture in the development of Philadelphia's wasted core depends on a debate on office building economics

How much rent can you get for a square foot of air-conditioned office space in the center of Philadelphia?

Not more than $4 or $4.25 a sq. ft., says Philadelphia's number-one real estate tycoon, Albert M. Greenfield.

Not so, says New York's Robert W. Dowling. If you make your space good enough, you can rent it for $5 a sq. ft.—and you will find it much more profitable to rent good space for $5 than to rent not so good space for $4 or even $4.50.

This is the point of issue in the great Philadelphia debate over how to redevelop the Chinese Wall which used to carry Pennsylvania trains to the very heart of the city at Broad and Market Sts. Present odds are about six to one that Dowling's arguments will prevail.

Enlightened economics still have a long way to go before they can be reflected in equally enlightened architecture, for Dowling's latest scheme is still far short of design inspiration. It proposes five almost identical slabs arising 28 to 30 stories around three sides of an open mall 115′ wide. But the basic decision to build only $5 space should give some architect the greatest opportunity of the decade —just as Rockefeller Center's similar decision that space more than 30′ from a window cannot be rented at a profit gave Ray Hood, Harvey Corbett, Wallace Harrison, Andrew Reinhard and the other architects their great chance 25 years ago.

The battle of the Chinese Wall started when Executive Director Ed Bacon presented the Philadelphia Planning Commission's Penn Center plan (FORUM, June '52) for a wide-open, triple-slab development of the old rail yards.

Greenfield was the first to enter the lists, forming what the Philadelphia newspapers described as a $50 million syndicate to buy the site and jam it almost solid with office buildings, a hotel, a department store, a bus terminal and other structures. He assailed Bacon's concept as "unrealistic," for suggesting the building on the site be restricted by ordinance to about 70% of ground area. This would not carry the tax load, said Greenfield; no one would pay more than $4 to $4.25 per sq. ft. air-conditioned, therefore there must be much more of it if the development was to pay off right.

A knight in shining money. But then Dowling, from his seat as real estate consultant to the PRR, spoke up to say he thought Greenfield was wrong. Land coverage of 70% was not too little but too much, he said; the most profitable office buildings on this site would be slabs only 72′ thick (about the same as the UN Secretariat). Open space would benefit not only the city but investors too. He would advise his client not to sell the land but retain it for an open park-like development, like Bacon's project. If the sites were not overbuilt, Dowling reasoned, the rental ceiling would be not $4 but $5. Quality pays; the limit is $4 or $4.25 only if you try to regain in bulk what you lose in quality of space.

Question: *How good will the Chinese Wall Redevelopment in Philadelphia be when the businessmen and bankers get through putting the dollar sign on the plans?*

Answer: *A lot better than most architects dared to hope.*

Question: *Will it be as good as the skeleton plan submitted by Architect Ed Bacon for the Philadelphia City Planning Commission* (FORUM, *June 1952*)*?*

Answer: *1) That is still possible, but by no means certain. It will, at any rate, come nearer realizing Le Corbusier's ideal of "cities in parks" than even Rockefeller Center in New York. 2) Almost equally important, it may contribute to retailing progress by bringing back downtown the best new thinking developed for suburban shopping centers.*

Question: *What is the big difference?*

Answer: *1) Instead of a three slab office building cutting across the site, the latest scheme runs five slabs around it: 2) Instead of a single concourse below the street level open to the sky, there will be two shopping levels in the mall integrated with open courts.*

Question: *Will architects be left out of the planning until the last minute, as they were in Pittsburgh?*

Answer: *Probably not. The next big step will almost certainly be the formation of a board of design to enlist the creative thinking of top-flight designers before it is too late.*

From Bob Dowling, long tagged a tough prospect by architects, this was welcome support, but then Dowling went even further to spring an enlightened scheme of his own.



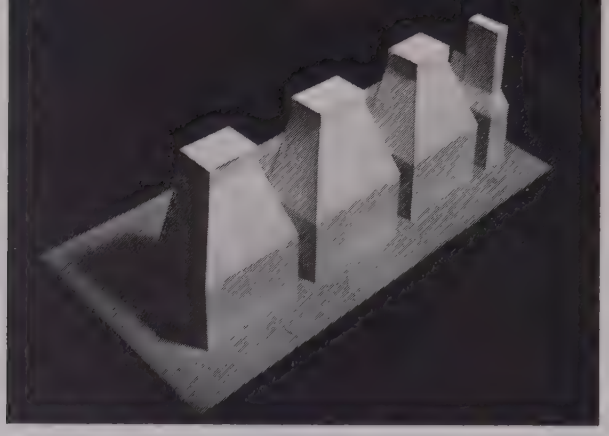
Albert M. Greenfield

The proposition. Dowling's proposal (see model photo) was tower coverage of only about 33% of the ground area on the easterly block, and about 35% on the westerly block. The large office building at the end would occupy almost all its island; but would be raised on stilts to continue the ground vista from City Hall. Rent: $5 per sq. ft., air conditioned.

Said conservative Greenfield about this plan: "I have my doubts.... I have my doubts. Those are New York rents. Has he found a paymaster for office space at $5 a sq. ft.?"

Dowling said yes, and he was not just talking. He had:

1. Found not one but three separate landing institutions ready to finance close to 100% of the construction costs of four of the five 30-story buildings on the credit of long-term leases from Grade A corporations.
2. Found buyers for the existing head offices of three large Philadelphia corporations whose immediate office needs would fill 70% of the office space projected for the "Chinese Wall."
3. Interested all the big hotel chains—Hilton, Statler, Sheraton—in the possibilities of a long-term lease on a 30-story hotel added to the redevelopment.



Zoning envelope *(above) which could have been filled according to existing Philadelphia ordinance. These rules will have to be amended to allow the lean straight slab towers projected in new plan, but city will get a fine bargain in open space.*



Greenfield's proposal *for this site (as envisioned by Philadelphia* Inquirer *artist on montage, right) would have loaded it with rentable space split into a number of functions, including a department store.*

These three telling accomplishments explain how the conservative Pennsylvania was persuaded not to sell its strategic site but lease five parcels out to operators who would build 1.6 million sq. ft. of office space and a 1,000-room hotel covering less than half the acreage. (The PRR reportedly turned down a bid close to $11 million for cash sale of separate parcels for uncorrelated buildings.)

Another important part of the plan: a central, two-level mall lined with shops making up a horizontal department store—bringing the suburban shopping center idea back into the heart of the city. This is also a development of Bacon's original scheme for a similar bazaar.

Open to the sky in summer, Dowling's shopping center would be roofed with translucent plastic panels, metal-framed, in winter. Hanging gardens would drop to subsurface level, where crowds generated by the existing suburban railroad station across the street, and by a projected bus depot below grade at the far end of the site, would assure store rents, Dowling thinks, equal to those at street level.

The generous width of adjacent streets would be another help to Dowling: Market St. is 100′ wide, and Pennsylvania Blvd. is to be widened from 90′ to 104′ under a 30-year-old agreement by which the city will pay PRR $1 million for the added strip.

To local doubters Dowling answered that Pittsburgh's open-planned gateway, which he helped to promote, also had confounded the wiseacres of real estate to renting at $4.77 per sq. ft., air-conditioned—without partitions, cost of which actually raised it over $5. Also: studies show that Philadelphia by 1960 will need 3 million added square feet of office space in its central district, and Dowling thinks 1.6 million sq. ft. not too much for this prime site.

He admits that conventional office space is worth only $4, but there is more economics than idealism in building prime space.

Space that doesn't pay. Dowling's 72′ slabs would have about 13,500 sq. ft. of rentable space per floor, where a slab 100′ thick might have 17,000 sq. ft. per floor. Dowling believes the 13,500′ would be so good it could all be rented at $5 per ft. to yield $67,500; where the 17,500′ would include so much windowless deep space it could not bring more than $4.50 per sq. ft. or $76,500. In other words the bigger floor would yield only about $9,000 more rent for 3,500 more square feet—or about $2.60 per sq. ft. added. Dowling postulates that $2.60 is too little to pay the cost of first creating, then operating, the added space. The Philadelphia slabs would cost probably $10 million to build ($24 per sq. ft., air-conditioned). In Pittsburgh the air conditioning alone brings 77¢ per sq. ft. in rent.

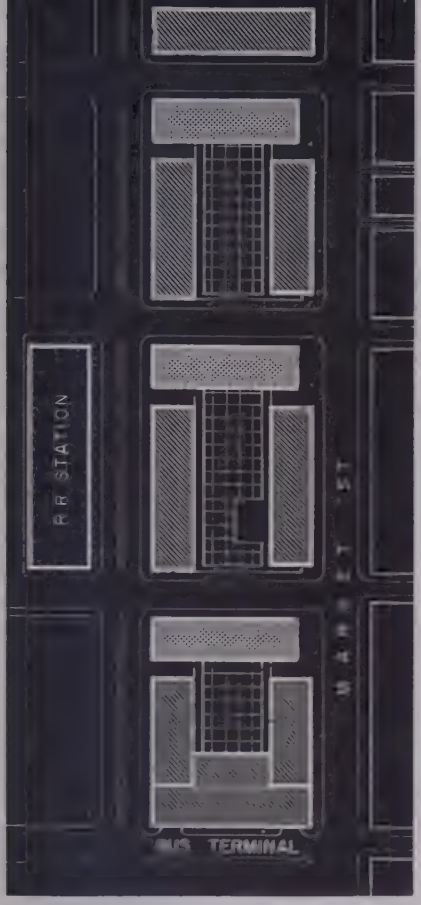
Constructors think that any added floor area—including added elevators—would cost just as much to build per sq. ft. as the prime smaller area. This registers a significant long-term shift in building economics: proportion of total cost eaten up by outside perimeter walls has decreased and therefore so has the wisdom of inflating the space inside the envelope.

The art of fine real estate. Dowling's scheme is actually much more novel financially than architecturally (even including its open spaces) because of the new way he slices a huge-city redevelopment into bite-sized investments. His five buildings will be built by four owners on land rented from the PRR (see model photo) and Dowling says he has the first three investors lined up. Some of these buildings, lease-held projects, will be almost entirely financed by large investors like insurance companies who can amortize their investment over a 30-year period, on the basis of good-credit leases presented by the "owner"—who in turn is virtually just an entrepreneur; *his* only investment is a rental of land from the PRR. Dowling had to present first-class tenants for the unbuilt buildings to create this credit. To get them as tenants he might have to find buyers for their existing home buildings; but the job would be nothing new for the veteran promoter.

Equitable's role. Dowling has divulged no details as to backers or tenants he has lined up for the owners of the Philadelphia site, but the Equitable Life Assurance Co. will presumably be in. Dowling has worked with Equitable on big developments for years.

Architects well remember Robert Dowling's past record with their profession. He has been a man who seemed to believe that building is simply economics packaged by architects and simonized by landscapers. Before employing architects he has preferred to figure out building shapes, heights, siting and even column spacing for himself, and his first massing of five similar office buildings which fence in this site will recall this.

But this time Dowling has declared that he wants a design board of top creative talent in on the control of the development early, and this month he made a proposal which might reassure even the wariest observer; the first name he suggested for the controlling board of design was Ed Bacon.





Photos: Laurence S. William

Bacon's proposal *for redevelopment of the Chinese Wall—developed for the Philadelphia City Planning Commission with Vincent Kling, consultant architect—set three slabs astride long site, with continuous sunken mall running beneath them and the cross streets.*





Dowling's proposal *retains central mall, on two levels, but turns office buildings in other direction, and builds a greater total of rentable space. At far end of plot is bus terminal, which Dowling also wants to dig in below grade to permit rental space above. Dowling's largest reason for running his tall slabs opposite to the Planning Commission's suggestion is that he wants to place all the office space as close as possible to Broad St., the best renting address.*



River facade, *broken by two-story "park" at eighth level, will sparkle with primary-colored sunshades*

"A MILE LONG AND AN INCH WIDE"

Long, narrow apartment building bends with the river to give 342 tenants view and ventilation

The handsome cooperative-apartment project pictured on these pages is part of a plan to redevelop the slums smack in the center of Yonkers, N. Y. If all goes well, HHFA will contribute 2/3 of the $1.2 million needed to clear the site; the city will contribute the rest; and a builder will put up the 800′ long building on stilts at an estimated cost of $3.8 million. FHA, it is hoped, will insure a mortgage under its Section 213 to make this a highly unusual cooperative. Says the Redevelopment Authority's Carl Feiss: "This looks like one of the best Eastern apartment projects we have seen."

Feiss and others think highly of Architects Rabineau & Geller's project for two good reasons: It makes site-planning sense and apartment-planning sense. It also looks economically feasible. Here is why:

Site-planning sense. Located on high terrain four blocks to the east of the Hudson, the building will be raised on tall stilts to give all apartments a view up and down the beautiful valley. To exploit that view farther still, the architects curved the "mile-long, inch-wide" building into an elongated boomerang shape. Service rooms face the rear; the entire rear facade is devoted to balcony-type access-corridors. Additional site-planning features: a two-story parking garage for half the tenants, outdoor parking for 150 others; shaded play areas under stilts on the ground floor.

Apartment-planning sense. Like many recent projects in the US and abroad, this building is only one apartment thick, permits cross-ventilation in all dwelling units. Most apartments are on a single level (see unit plans) served by open access-corridors on every floor. Also, like LeCorbusier's apartments at Marseilles, this building has



redevelopment project area site plan and ground floor plan

***Straddling a seven-acre redeveloped slum site** in the center of Yonkers, the building is flanked by parking space (400 cars) to rear and landscaped park on river side. Because building is only one apartment thick (38′) and bent in middle, each living room will look up or down the river. Stilt construction elevates building for better view, creates covered sitting areas and children's play courts. Local zoning law requires one parking space per apartment.*

HUDSON TERRACE APARTMENTS
CITY OF YONKERS, N. Y.
J. THOMAS C. WARAM, planning director
JONATHAN MARSHALL and NEWELL L. PLUMHOFF, redevelopment planners
ELI RABINEAU, architect
A. W. GELLER, associate architect
McHUGH & McCROSKY, planning consultants
PETER W. BRUDER, engineering consultant

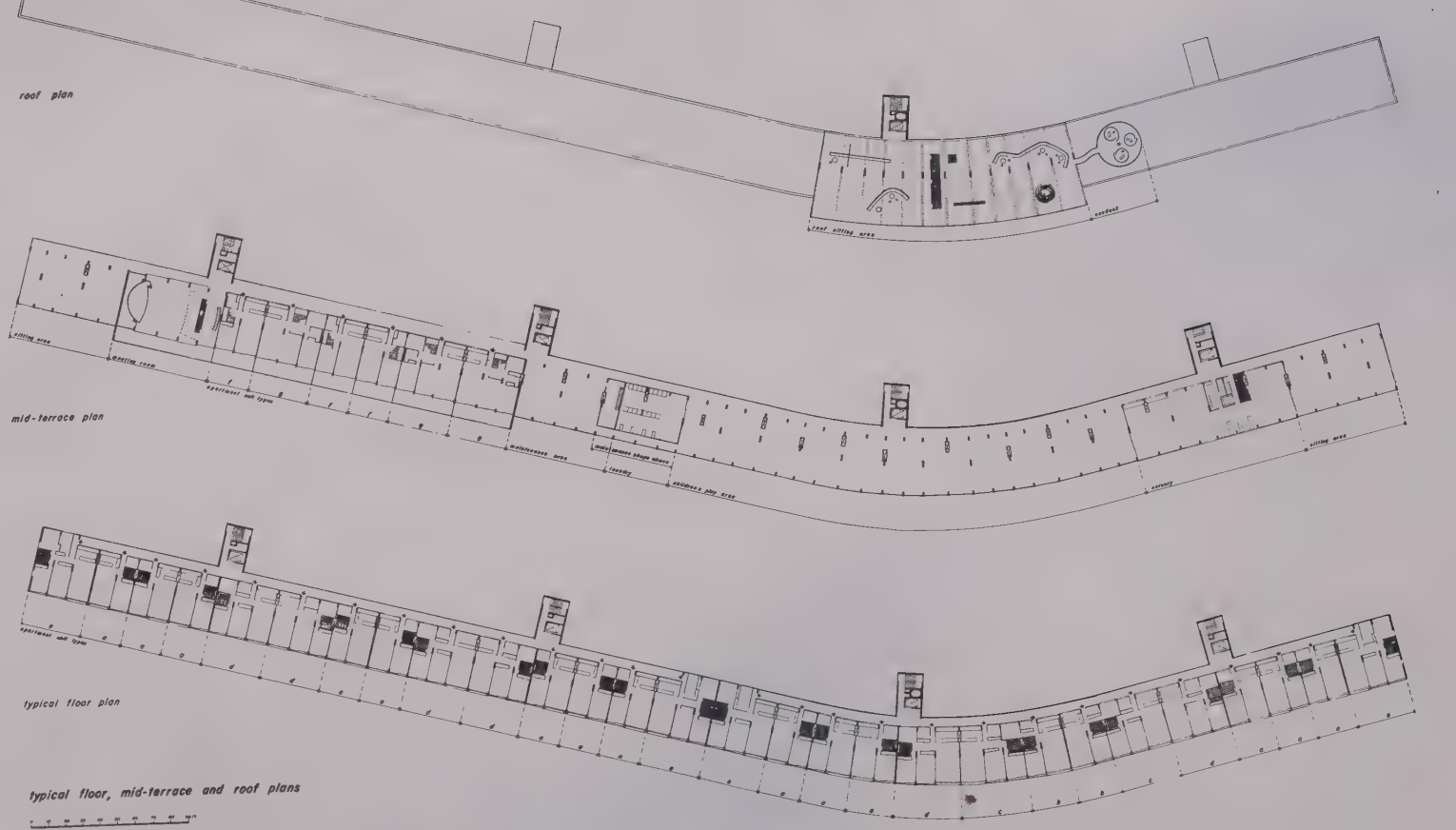
a public "street" halfway up. Left almost completely open, the "street" will be used for nursery schools, recreation and public services. The roof will have similar public facilities.

Since the spectacular view is to the west, the architects spent much thought on the selection of projecting, roller-shutter type sunshades, found that a standard Swiss product served their needs best. Shades will be in bright, primary colors, will help enliven the huge facade and subdue any extravagantly colored drapes in individual apartments.

Economic sense. Assuming that contractors will put firm bids under the very low (95¢ per cu. ft.) cost calculated by the architects—who expect big savings from their rigorously standardized concrete frame and similar factors—the economics become feasible.

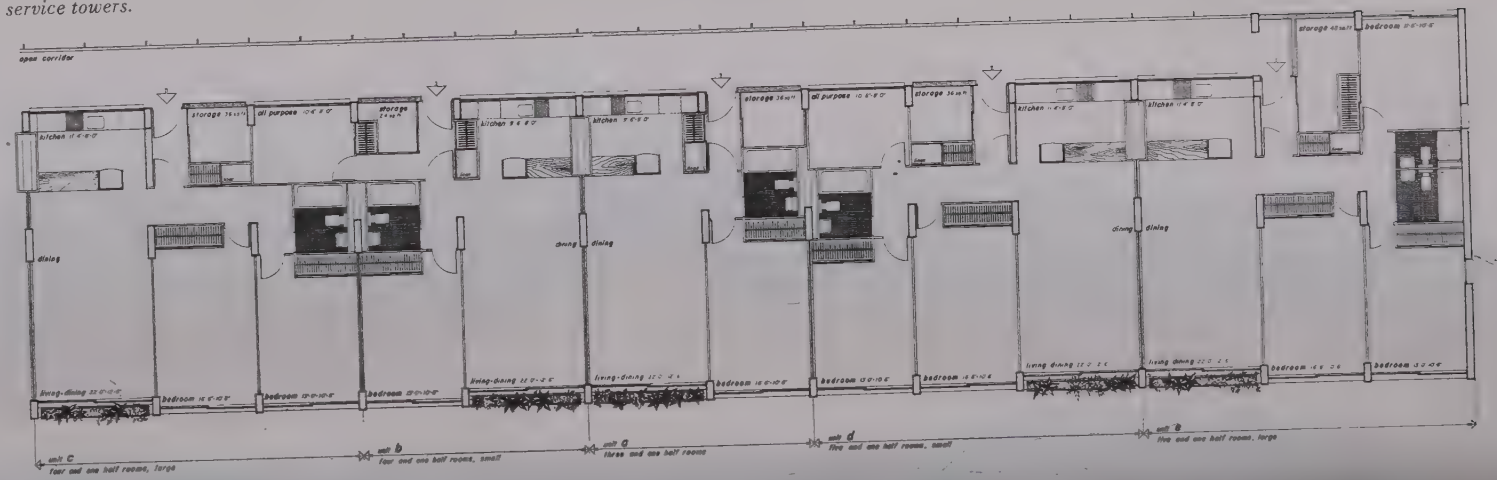
The architects' calculations put expected rentals well within the $30 per room per month limit which FHA likes to clap on its Section 213 cooperatives. Preliminary analysis suggests an average of about $98 per month per apartment (average size: about 3½ rooms) or less than $23 per room—including mortgage payments and maintenance charges. If construction costs should eventually reach as high as $1.25 per cu. ft., room rentals would approach $28.

There is only one hitch in all of this: while it is no trick to find a private sponsor to put up an ordinary FHA apartment building to make a fast, government-insured profit, this project, on the other hand, seems to require a sponsor with enough vision to realize that the potential economies of standardized construction can result in similar profit. If Yonkers can find such backing, the imaginative and far-sighted city fathers who commissioned Rabineau & Geller's project may teach the rest of the US some valuable lessons about real values in apartments.



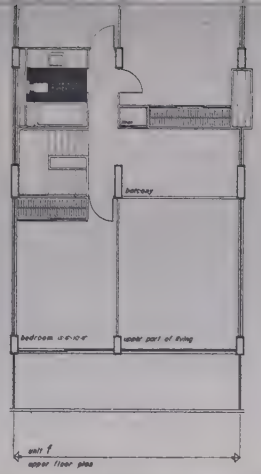
typical floor, mid-terrace and roof plans

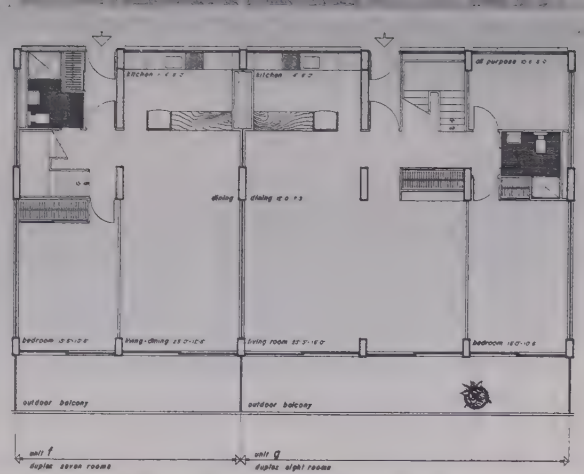
Typical floors *have 28 "flats" each (336 total) ranging in size from 3½ to 5½ rooms (detail plans, below). Living and bedrooms face west toward river view; bathrooms are inside; kitchens, storerooms and all-purpose rooms face rearward on exterior access corridor which stretches full length of building. Vertical access is provided by four projecting service towers.*

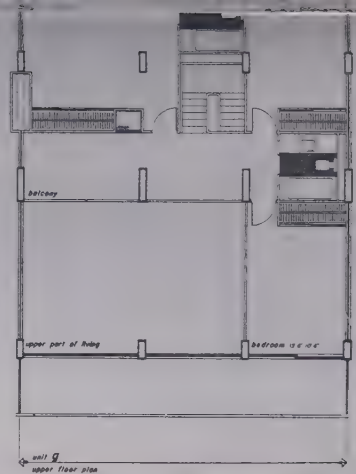


typical apartment unit floor plans

Six duplex apartments *of seven and eight rooms each (detail plans, right) occupy preferred position on two-story "park" floor. They enjoy projecting balconies off living and bedrooms. Upper bedroom can extend full 38' width of building because there is no access corridor on this level.*



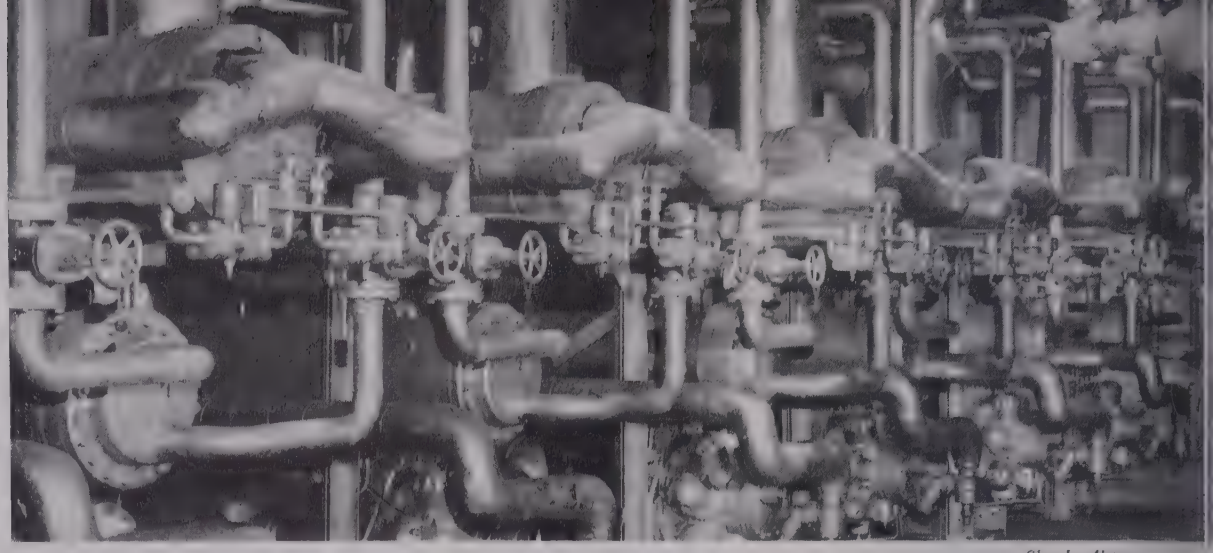












Central system equipment: *seven 75-ton chillers in Washington's Greenbriar Apartments symbolize the growing complexity of apartment house operation.*

Chrysler Airtemp

Apartment air conditioning: Demand for guaranteed weather forces building investors to study the relative merits of giant compressors vs. small room coolers

The biggest new idea in apartment building is air conditioning. *Witness the ever increasing crop of air-conditioning boxes growing out of apartment windows, like those in Manhattan House (next page). Air conditioning is already mandatory in the high-rent markets of southern cities such as Dallas, Houston and Atlanta. And in Washington about 50 fully air-conditioned apartment houses have gone up since the war.*

As a result apartment investors everywhere are facing up to the fact that tomorrow's apartments may have to be air conditioned to compete with the lower costs and rents of yesterday's buildings—for the same reason investors today would not dare put up an office without air conditioning.

Apartment air conditioning has made the most headway along the East Coast from New York to Florida and across the South to Texas. But increasing activity is reported almost everywhere. For instance, three big, fully air-conditioned apartment houses were recently built in Pittsburgh; others have risen in Roanoke, Indianapolis and Wichita. Still others are planned for St. Louis and Chicago. (In Los Angeles and San Francisco, however, air conditioning seems to be no match for low humidity and balmy ocean breezes.) As many as 500 air-conditioned apartment structures ranging from walk-ups to 26-story skyscrapers have gone up since the war.

The rising demand for apartment air conditioning is perhaps best illustrated by what is happening at New York City's Manhattan House (AF, July '52). To hold down costs, central cooling was not provided. But realizing that some of their well-heeled tenants (rents run $65 a room) might want air conditioning, N. Y. Life spent $60,000 for extra wiring and outlets so tenants could install room coolers. However, in last summer's steaming heat, tenants swamped N. Y. Life with requests for still more wiring and outlets. At last count 247 of the 580 tenants had room coolers—a total of 400 cooling units. Some apartments have three or four units apiece and new coolers are constantly appearing in windows.

Not far from Manhattan House on New York's swank East Side, two big houses have just gone up with central cooling systems. Also revealing are the advertisements of other New York apartments which boast about being equipped with electrical outlets for cooling units.

Air conditioning has also cracked Philadelphia's high rent market. Three big new downtown buildings have central systems.

For three good reasons Washington is probably the most air-conditioned apartment city in the US: 1) the capital is chiefly an elevator-apartment city; 2) it suffers from muggy weather in spring, torrid weather in summer; and 3) it has a higher proportion of air-conditioned *offices* than any other city in the country. As a result, practically all Washington elevator apartments have been air conditioned since the war.

There are fewer air-conditioned apartments in hot southern cities such as Houston and New Orleans, but only because they have relatively fewer apartments. But in many southern areas those elevator structures that are built must have cooling systems just to get FHA commitments.

Financing. Because air conditioning is insurance against future obsolescence—especially in the high rent bracket and the high temperature belt—FHA favors central cooling, calls it a "very desirable plus factor." In places such as Washington, where cooling is almost taken for granted, FHA feels that a proposed project without air conditioning might lack market acceptability. As FHA's assistant commissioner for underwriting, Curt Mack, tactfully puts it: "In such a case we would probably remind the developer that he left something out."

In short, FHA will usually underwrite the first cost for apartment air conditioning. However, as it requires with all major items in rental property, FHA calls for reserves set aside for the maintenance and replacement of cooling equipment.

Costs. Including heating, central air-conditioning systems are running 10-12% of the total cost for new apartment buildings. Heating alone runs about 4-5%. However, the exact price depends on the size of the structure, type of system used and the number of convectorlike, year-round air-conditioning units in each apartment. For instance, here is how actual prices (including heating) vary:

- New York City. Total air-conditioning cost for the $4.1 million, 16-story, 200 East End Ave. apartment house: $445,000; $557 per room.
- Washington, D. C. The $1 million Commander: $540 a room. The $2.5 million Washington Circle: $600 a room.
- Pittsburgh. The $5.1 million Bigelow: $532,000; $445 a room.
- Dallas. The $1.5 million Dorchester: $232,000; $655 a room.
- Ft. Worth. The $3 million Westchester: $468,000; $614 a room.



© Ezra Stoller

Evidence *of public's demand for air conditioning is the rush of tenant-owned coolers popping out of the windows of Manhattan House in New York City.*

Air-conditioning check list for apartments

While built-in cooling is comparatively new in apartments, experience has already uncovered many pointers for the unwary:

▸ *Central systems should be foolproof. Unlike office buildings, apartment buildings are usually staffed with personnel unfamiliar with air conditioning. This is especially true in smaller buildings where the regular janitor tends cooling equipment.*

▸ *Condensation can cause considerable damage. Especially when fan-coil units are used, their 45° water risers, take-offs, drains, and all fittings must be carefully insulated and sealed to prevent condensation.*

▸ *Zone controls will often pay for their added cost. In spring and fall, for instance, harried maintenance men have been asked for heat by tenants with northern exposures while angry people on the south want cooling, or at least no heat at all.*

▸ *When tenants complain, it is usually because of noisy units and inadequate dehumidification. Only a first-rate system will cure both. Humidity control is especially critical at night when the temperature dips but outside air is still moisture laden. When the system is inadequate tenants unwittingly overchill their rooms like ice boxes in an attempt to get rid of excess moisture.*

▸ *Many engineers recommend full thermostatic control for all apartments, not just on-off switches. This permits quick changeover from heating to cooling—often needed several times every spring and fall—without calling on the janitor. And without such controls, tenants complain about overheating. On warm winter days they turn on the conditioner just to bring in refreshing outside air, but passing through the unit this air gets heated unnecessarily.*

The above points naturally mean some added first cost compared to the cheapest possible system. Without them, however, maintenance costs can skyrocket.

1. Window-type room conditioners

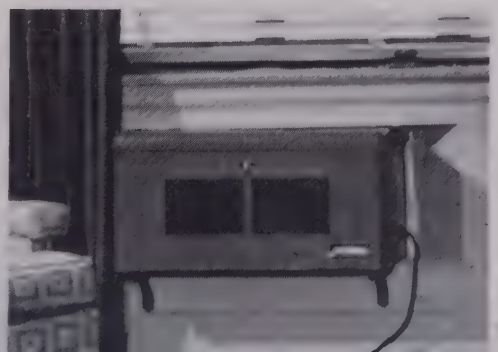
Here is how apartment investors are using standard room coolers to meet the demand for air conditioning. For rents starting at $58.50 a month Builder Robert Metrick has put ½ hp box-type coolers in all living rooms and bedrooms of three Long Island projects—1,000 cooling units all told for 362 two- to six-room apartments. Each unit goes in a 28″ x 15″ under-the-window hole topped by a steel lintel. Total installation cost averages $57 per cooling unit. In addition, wiring runs $25-30 per air-conditioning outlet. Net price for the room coolers depends on how many units are bought; the ½ hp ones retail for $300.

The coolers are wired to each apartment's electric meter so tenants pay operating costs. However, Metrick's janitors replace filters and handle ordinary service calls. A local dealer takes care of emergency breakdowns within the five-year warranty period—the usual guarantee with room units—for a flat $1 per unit per year. And according to a US Treasury Dept. ruling, room conditioners are amortized in eight years.

Metrick's architect for his three projects was Max M. Simon.

Gene L. Kraut for Tedders-Quigan Corp.





Built-in units *cost less than fitting them in casement windows. Above is Long Island Builder Robert Metrick's Stewart Manor project. At right is typical unit in his Child Garden Apartments. Tenants pay operating costs, about $20 a summer per unit.*

2. Fan-coil unit air conditioning

Washington, D.C.'s sprawling, $12 million "Woodner," containing 1,140 apartments, is the biggest air-conditioned house in the US. Its 1,300 ton fan-coil system typifies a method widely used in all-size apartment houses.

Anchored to the Woodner's basement slab, two motor-driven centrifugal compressors—600 and 700 hp—refrigerate water for distribution to each of 1,491 fan-coil units under windows throughout the building. In winter the operating engineer switches over to heating by by-passing the same water to four low-pressure oil-fired boilers.

Without ductwork, fan-coil units provide air conditioning the year round for all Woodner rooms except kitchens and baths—standard procedure in apartment houses. Chief feature of this installation is that each unit requires a small wall opening for fresh outside air (see photos, right). About 25% fresh air* is pulled into the unit by a small fan, ranging from 1/20 to 1/10 hp depending on cooling capacity. The fresh air blends with warm room air also drawn in by the whirling fan. The resulting air mixture is filtered, and blown over the water coil for heating or cooling. Then the conditioned air is discharged upward into the room.

Exhaust fans for kitchens and baths pull in surplus cool air from the air-conditioned rooms to provide secondary cooling in these spaces. However, independent steam convectors heat the baths in winter.

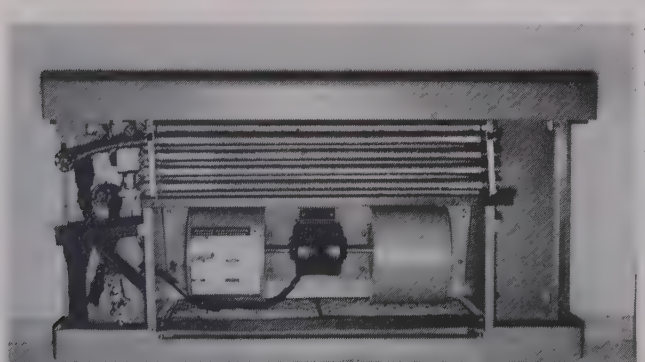
The Woodner's maintenance staff checks each fan-coil every spring and fall: motors are oiled and dirty filters are replaced. (Similar units in Manhattan apartments are blackened with soot so fast they need new filters every three to four months.)

Costs. Including heating, total price for the Woodner's air-conditioning system was $1.1 million. (Without cooling, heating alone would have been about $600,000.) Thus air conditioning averages $500 a room in a project where 80% of the apartments are 1½ room efficiencies.

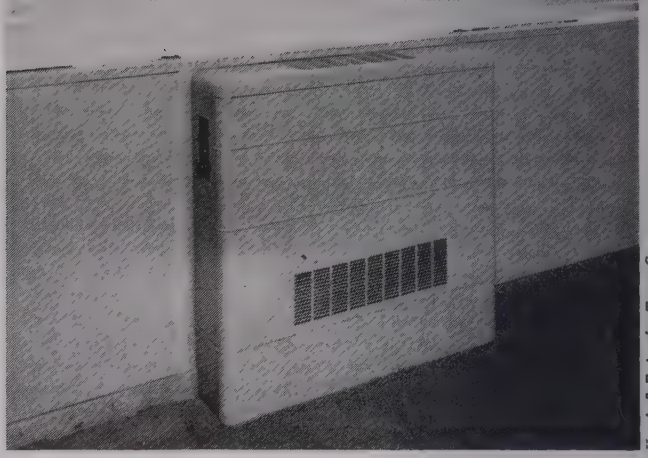
Excepting personnel expenses, operating costs for cooling are estimated at $22,000 a summer—mostly for electricity. This is based on Washington's very low electrical rate which dips to .795¢ per kw-h when air conditioning is used. Not counting exhaust fans, the heating-cooling system adds up to approximately 1,700 installed horsepower. Nonelectrical expenses include miscellaneous items like make-up water for the cooling tower. All told, 375,000 gal. of oil were burned up last year for heating and domestic hot water. The main air-conditioning plant is amortized over the regular 20 years. However, individual fan-coil units are amortized over 10 years (whereas conduit units—next page—are amortized in 15 years because they do not have fans or motors).

The Woodner's architects were Builder-Owner Ian Woodner and W. F. Holladay. Associate designer was David S. Oman and mechanical design was by General Engineering Associates. Rents run $60-65 per room.

* Purpose of the fresh air is to dispel odors and smoke and ventilate rooms.

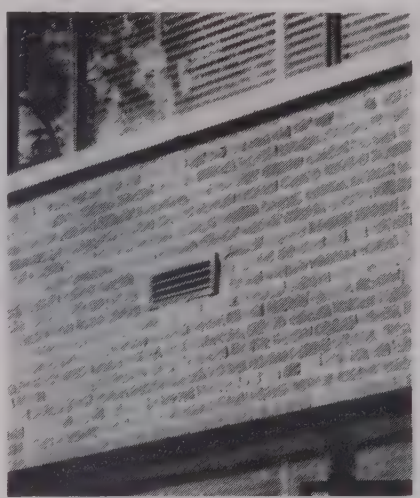


American-Standard



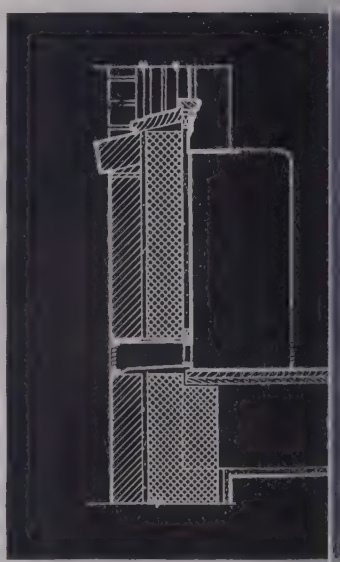
Harris & Ewing for Trane Co.

Typical fan-coil unit *in Woodner apartments provides cooling and heating, is recessed 5" in wall, extends into room 7".*

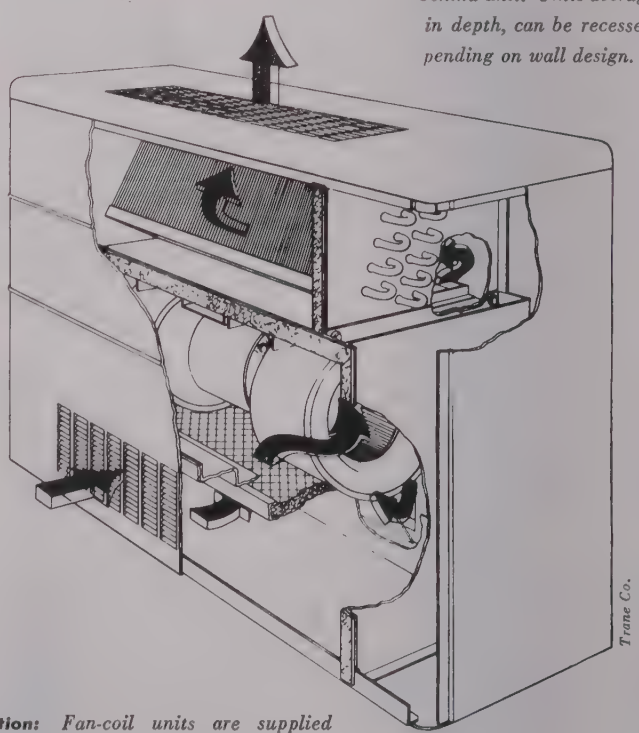


Trane Co.

Fresh-air grille *is for fan coil unit in Beacon Towers, Brookline, Mass.*



Air intake *can be anywhere behind unit. Units average 12" in depth, can be recessed depending on wall design.*



Trane Co.

Operation: *Fan-coil units are supplied chilled water down to 45° in summer, hot water up to 170° in winter. Fans pull air through filters, blow air up through coil.*

3. Conduit air conditioning

The 247 apartments in Philadelphia's plush, $4 million Parkway House are fully air conditioned 365 days a year by a $456,000 high-velocity conduit system. In this system each room unit works without a motor and needs no hole in the wall for outside air. A big 100 hp fan on the 13th-story roof hurls 45,000 cfm of conditioned outside air through a series of 8″ round conduits dropping through the building. Like giant arteries hidden in wall columns, these vertical conduits feed warm or cool air to each of 708 room units in 247 apartments (see sketch).

Moisture control. Like fan-coil units, each Parkway House wall cabinet also houses a water coil for heating and cooling room air. In summer, water chilled to 50° flows through the coil. Its effect is chiefly *cooling*: no unit with a water coil alone can constantly remove the right amount of moisture under changing outside conditions.

Major reason for the separate supply of conduit air is to achieve proper dehumidification at all times, e.g., at night when humidity is still high though outside air temperature may be only 80°. It is the extra-dry conduit air that *dehumidifies*. Thus with a conduit system the water and air are independently controlled to respond at once to any new combination of outside heat and humidity. (At the Parkway House each tenant controls his own climate manually.) Another reason for conduit air is so fresh air can be constantly poured into apartments the year round.

Comparison. Because conduit units each contain neither motors nor filters, they require but little room maintenance. However, being without filters, they collect lint over their coils from return air and may need vacuum cleaning two to three times a year. Although the one big fan has about 15% more horsepower than the total of all the little motors in an equivalent fan-coil system, operating costs for the systems are about equal. Reason: the large motor is more efficient than hundreds of small ones.

Parkway House's 512-ton air-conditioning plant is located on the roof* and uses two steam-powered absorption machines for refrigeration, because Philadelphia offers low-cost steam (72¢ per 1,000 lbs.). There are no heating boilers; the purchased steam is channeled through four heat exchangers—one each for north, south, east and west zones—to heat hot water in winter.

Cost. Including heating and $54,000 for all kitchen and corridor exhaust fans, first cost breaks down to $507 a room for 900 rooms (FHA count would be 1,036 rooms). Including steam and 1.2¢ electricity for 300 hp of fans, pumps, etc., annual operating cost is $27,000 for cooling, plus $30,000 for heating 290,000 sq. ft. of air-conditioned space. About 32.2 million lbs. of steam are consumed annually for all purposes; of this 12.8 million lbs. are for summer cooling.

Parkway House was designed by Architects Roth & Fleisher for Builder-Owner E. J. Frankel. The N. Y. Life Insurance Co. financed a $2,925,000 conventional mortgage. Rents average $55 a room.

* Since absorption machines have no motor or compressor there is little vibration. However, big centrifugal compressors are even being installed on roofs without vibration problems by mounting them on spring-supported "floating" slab.

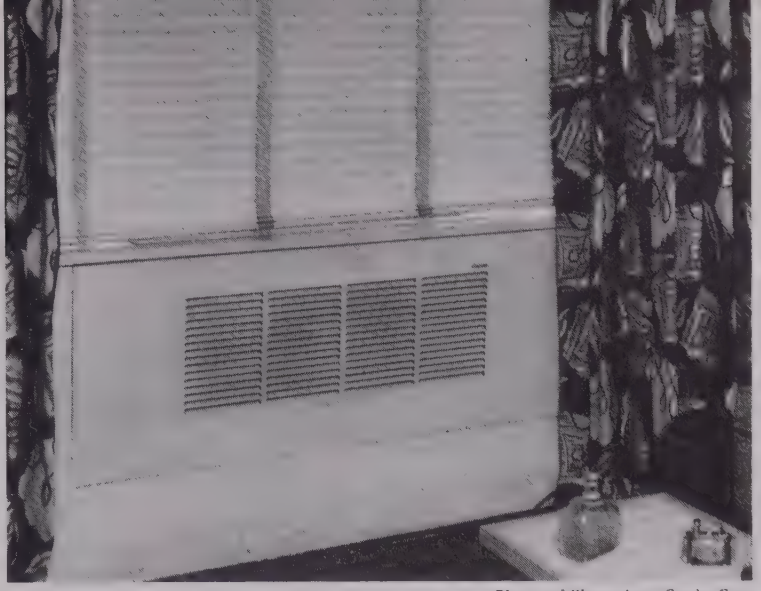
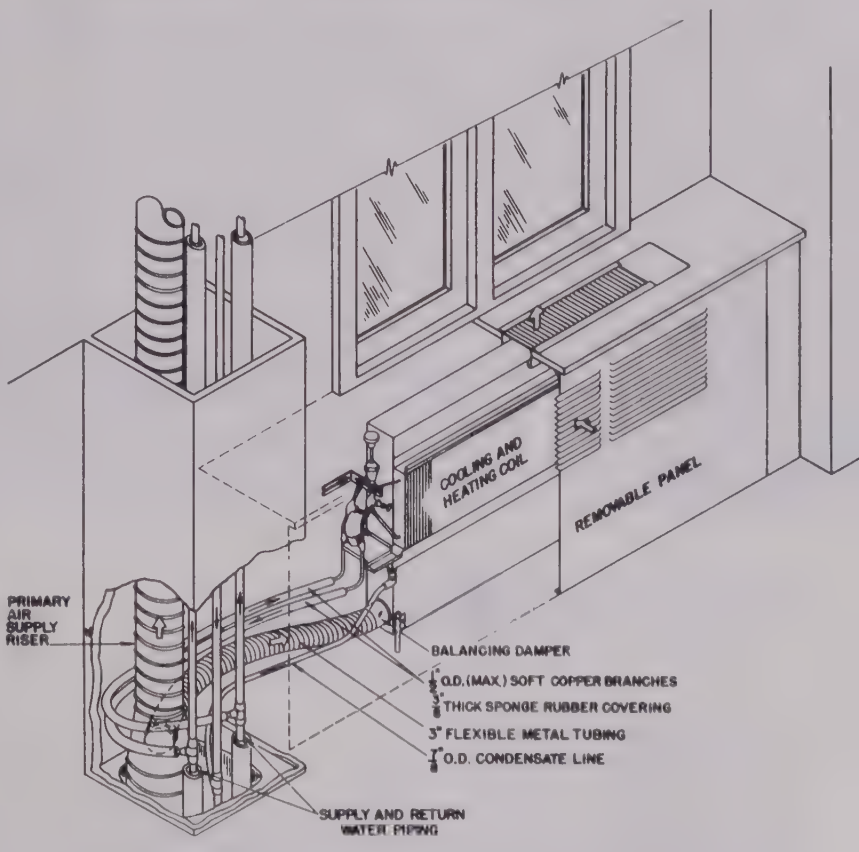
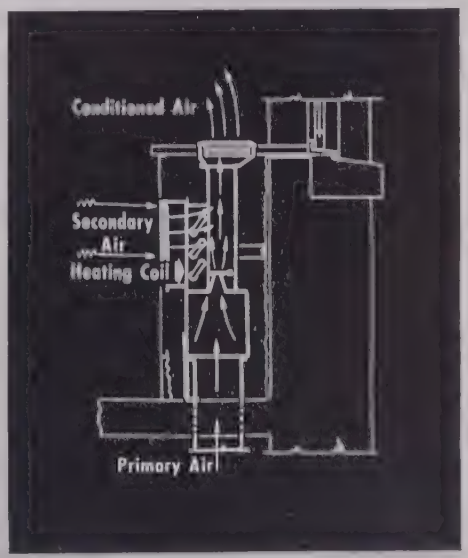


Photo and illustrations: Carrier Corp.

Conduit cabinet *is recessed 8″ in wall, does not require outside air opening in wall behind. Fresh air is constantly supplied via conduit ducts.*

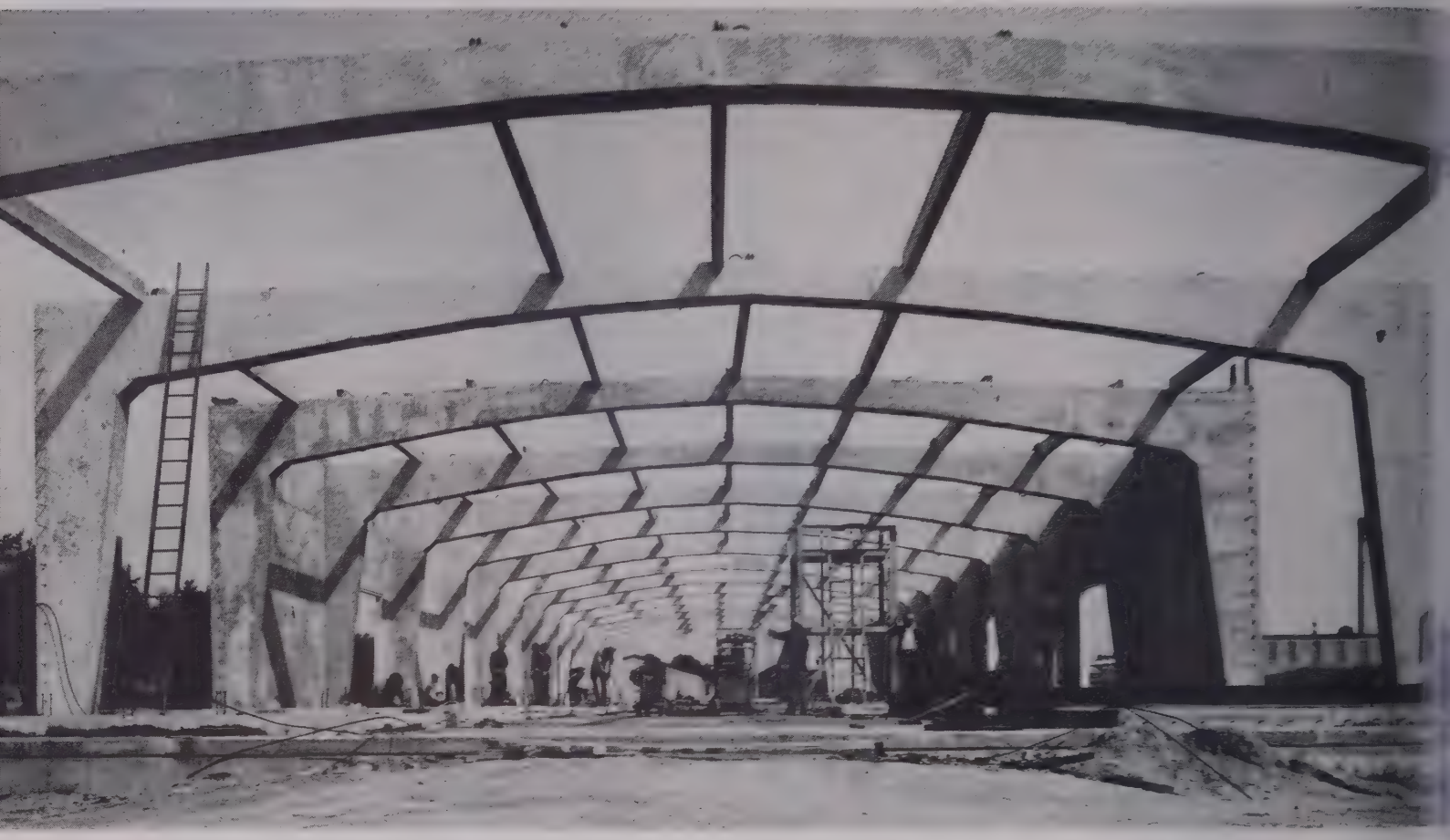


No motor, *fan or filter is necessary; high-velocity conduit-supplied air induces secondary room air into unit. Baffled plenum inside unit is for suppressing air noise. Supply water temperatures in coil range from 50° in summer to 170° in winter.*



BUILDING ENGINEERING

1. **Precast concrete warehouse at $4.20 per sq. ft.**
2. **Hotel air-conditioning at $3.10 per sq. ft.**
3. **Ice-cold concrete at 35¢ per cu. yd.**
4. **Flexible school heating at $1.98 per sq. ft.**
5. **Glass-walled factory at $6.15 per sq. ft.**



Concrete frames *weighing 22 tons each are cast on the floor slab and tilted into position*

1. TILT-UP RIGID FRAMES SPAN 60′

Precast bents, purlins and two-story wall panels cut warehouse cost to $4.20 per sq. ft.

Precast construction is proving more and more economical. In this Place & Co. warehouse at South Bend, Ind., the technique is used for an entire warehouse structure—60′ rigid frame bents, 18′ high wall panels, and 20′ purlins. All of these were cast on the building's 6″ thick floor slab and tilted into position. The entire cost of the 60′ x 340′ building, including 7,200 sq. ft. of office space, was $156,878 or $5.93 per sq. ft.; cost of the structure itself was $106.969 or $4.20 per sq. ft.

The 22 ton, 18½′ high concrete bents, the largest ever to be precast, are erected 20′ o.c. They not only carry the roof, but also support 8′ wide mezzanine floors on each side of the building for supplementary storage space. And, the three end bays contain a second story for office space.

The 17 bents are cast on the floor slab and when cured are simply hoisted into position. This is done with two cranes hoisting simultaneously with an interconnecting hitch between two lifting hooks to reduce the possibility of damage through unbalanced hoisting. Using this method five bents were raised and braced in five hours. After each bent is positioned 1⅛″ diameter tie rods beneath the floor slab are welded to dowels at the base of each bent. Turnbuckles in the tie rods are tightened as the bent is loaded, then greased, covered with tarpaper and the floor pockets filled with concrete.

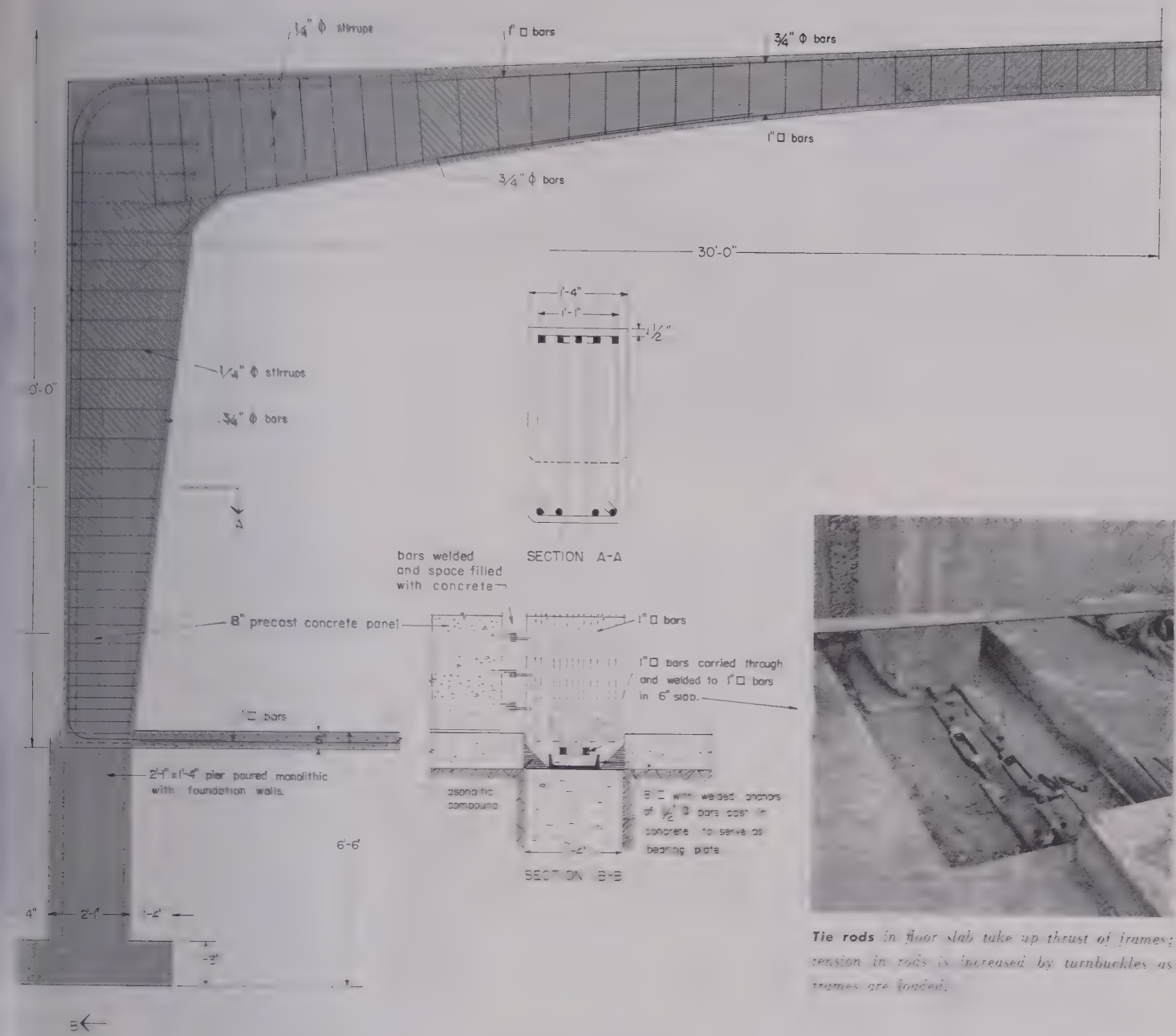
Once the bents are erected and braced 20′ long, 6″ x 12″ purlins span between bents and their joints are grouted to form a monolithic structure. The warehouse is roofed with a concrete deck of 7½′ by 2′ panels topped with a 4-ply built-up roof. It contains 14 skylights to light the warehouse.

Largest of the precast wall panels are 18′ square, 6″ thick. Three of them on each side of the building contain large openings for overhead doors, while those around the office and warehouse area contain openings and sills for windows and door openings as required. In erection-wall panels are braced with a steel frame and tilted into position. Then reinforcing bars between each panel and bent are tack welded, and the vertical joints between them filled with concrete.

The warehouse was designed by Structural Engineer William S. Moore; Place & Co. were the contractors.

Horizontal casting *simplified formwork and reinforcing, brought factory production-line economies to the job.*





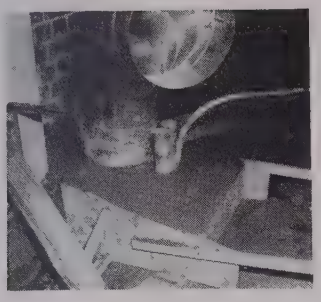
Tie rods *in floor slab take up thrust of frames; tension in rods is increased by turnbuckles as frames are loaded.*

Raising the frames *is done with two cranes; an interconnecting hitch between two lifting hooks is used, avoids possible distortion through unbalanced loading.*

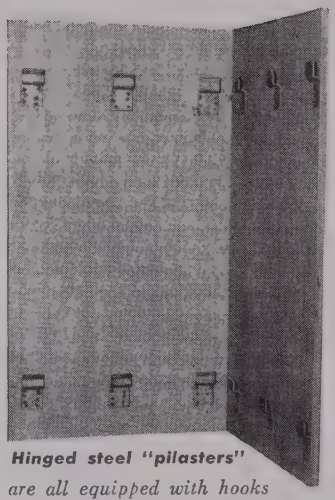


Base of frame *is jacked up and a board placed under it to protect floor slab during the raising operation. Wood blocking in slab pocket prevents frame from sliding forward.*

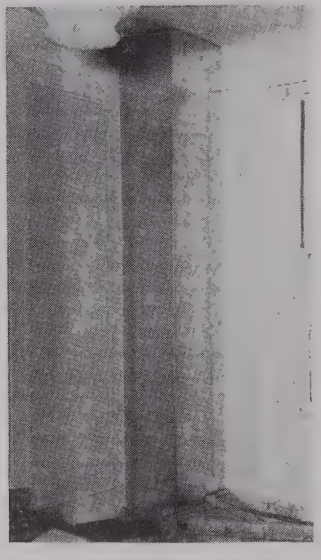




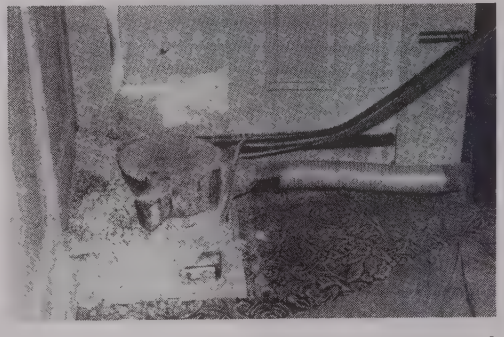
Rooftop stack *leads filtered air to vertical ducts.*



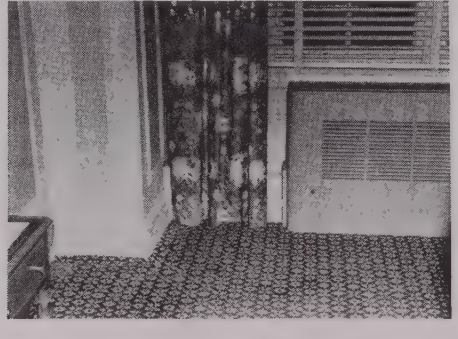
Hinged steel "pilasters" *are all equipped with hooks which grasp brackets.*



"Pilaster" in place *is ready for pouring of concrete.*



Smaller take-offs *connect stack with room units under windows.*



Remodeling completed, *with stack embellished to look like paneling.*

Duct and pipes *are enclosed by permanent steel formwork or "pilaster." Each such stack serves two rooms, one on each side.*



2. REMODELING WITH AIR CONDITIONING: An economical way to up-date a hotel

Efficiently engineered plumbing and duct-work enabled the 600-room Atlanta Biltmore hotel to be air conditioned for $3.10 per sq. ft. including refrigerating machinery and room units. The work was done with the hotel 85% occupied, thus saving much of the revenue loss in conventional remodeling. Actual remodeling cost only $51.60 per room, half the going rate.

Vertical duct and pipe stacks serve window air-conditioning units, one stack to each pair of adjacent rooms throughout the hotel's ten bedroom floors. Air is drawn in at the roof, cleaned and dehumidified, then enters the top of each 12″ vertical duct. This duct acts as a plenum, from which air is drawn through 4″ flexible "hoses" to room-conditioning units, the necessary suction being supplied by a 6″ fan in each unit. Water risers run alongside the ducts, each 1½″ pipe system circulating hot or chilled water depending on the season.

Pipes and ducts run through 2′ square holes in the floor and branch out to the conditioning units on either side of the stack. Iron brackets around the vertical duct and pipes carry 18 ga. steel formwork, which remains a permanent fixture. Pouring is from the floor above: first, 3 cu. ft. of lightweight vermiculite concrete; then loose vermiculite fill up to the ceiling height of the next floor; finally a capping of 1 cu. ft. of vermiculite concrete. Repeating this on every floor gives a four-hour fire rating to each duct column.

Advantages over a conventionally fireproofed shaft: this shaft is 4″ smaller each way (saving 1¼ sq. ft. per room); no caulking around pipes; no waiting for concrete or plaster to set; and the vermiculite provides both thermal and acoustical insulation in a single operation.

This ingenious technique was engineered by Hotel Engineer W. K. Converse with the cooperation of Southern Zonolite Co. and Carrier Corp.

3. ICE-COLD CONCRETE

Dam builders use cracked ice to reduce cost of cooling concrete

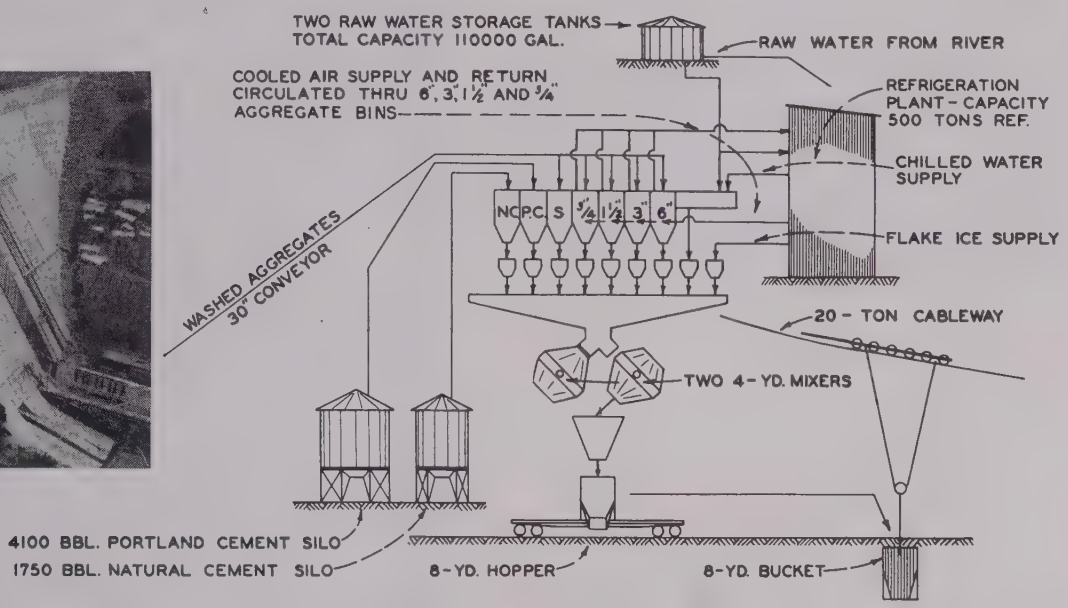
In dam construction the heat generated by hydration of cement accumulates faster than it can be dissipated. Even with a lean mix this can set up stresses powerful enough to crack a massive 100′ retaining wall. To date the difficulty has been overcome by piping cooling water throughout the concrete at the high cost of $1 to $1.40 per cu. yd. York Co.'s new solution is to pour flaked ice into the mix—up to 90 lbs. of it per cu. yd. of concrete. Together with prechilling of the other ingredients, this keeps curing temperatures below a safe 75° F. and costs only 35¢ per cu. yd.



Batching tower *at Folsom dam, Calif. contains refrigerating equipment and mixers*



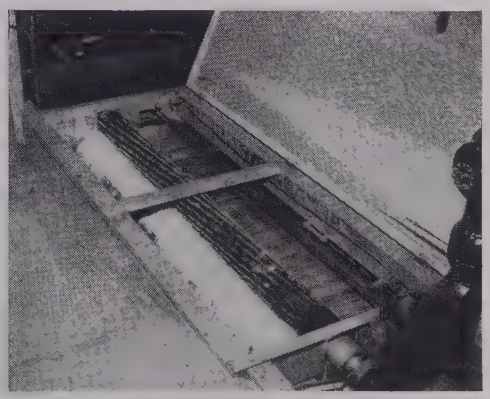
60,000 tons of ice *went into Philpott dam, Va. Right, aggregate flow diagram.*



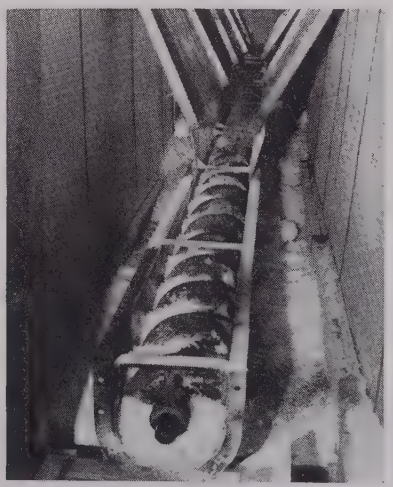
Photos: Cartwright Studios

Inside the ice plant *at Folsom dam: Ice forms on revolving steel cylinder, is flaked off (1), fed to bucket elevator by screw conveyor (2), thence to storage bin at top of batching tower (3) from which it drops along with other ingredients into mixers (4) and is finally conveyed to the dam in 8 cu. yd. bucket hung from 20 ton cableway (5).*

1



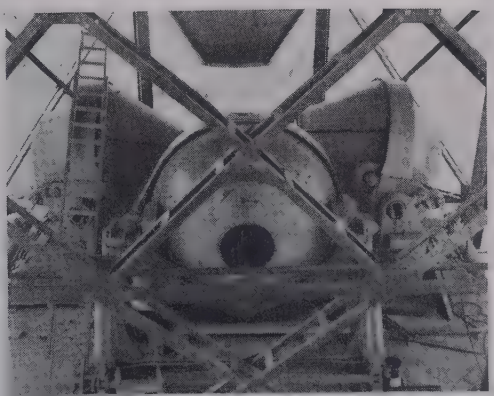
2



3



4



5



4. DOUBLE DUCT HEATING

Warm and cool air are mixed at outlet grille to improve control

Temperature control proves economical, rapid and flexible in this $1 million Connecticut high school thanks to a new forced-air system using one central boiler, four decentralized fan rooms and two plenums. One of these plenums is for hot air, one for cold.

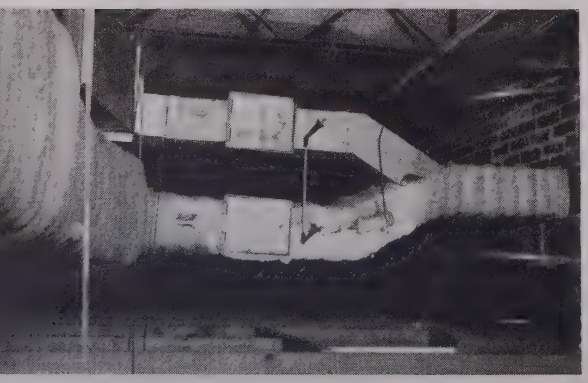
Steam heat is piped from a central boiler to four separate fan rooms, each serving part of the building. In the classroom wing two supply plenums run above the corridor. Each supplies fresh, filtered outside air; one at 55°F., the other heated to 135°F. In short take-off ducts leading from the plenums to each classroom this hot and cold air is mixed as desired for optimum warmth and ventilation. Air flow in each take-off is adjusted by pneumatic mixing dampers automatically controlled by room thermostats. The blended air enters each classroom through a single register high in the corridor wall. It is exhausted through continuous openings below the windows, is carried beneath the floor to a return plenum under the corridor and is discharged or recirculated as required to supply 17½ cfm of fresh air per pupil.

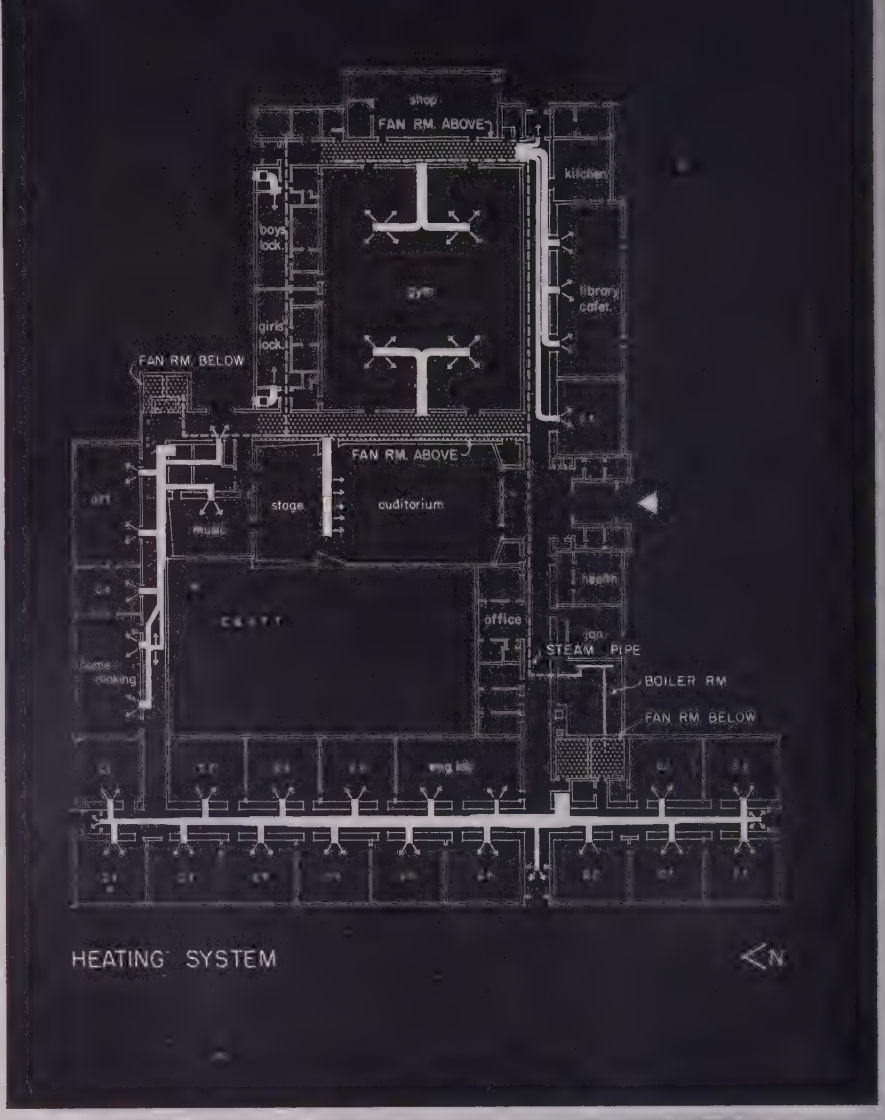
This system is particularly advantageous in overcoming short periods of solar overheating in classrooms. For instance, on a chilly fall or spring day when the afternoon sun pours in heat faster than is desirable, extra cool air is immediately supplied to counteract the rise in temperature

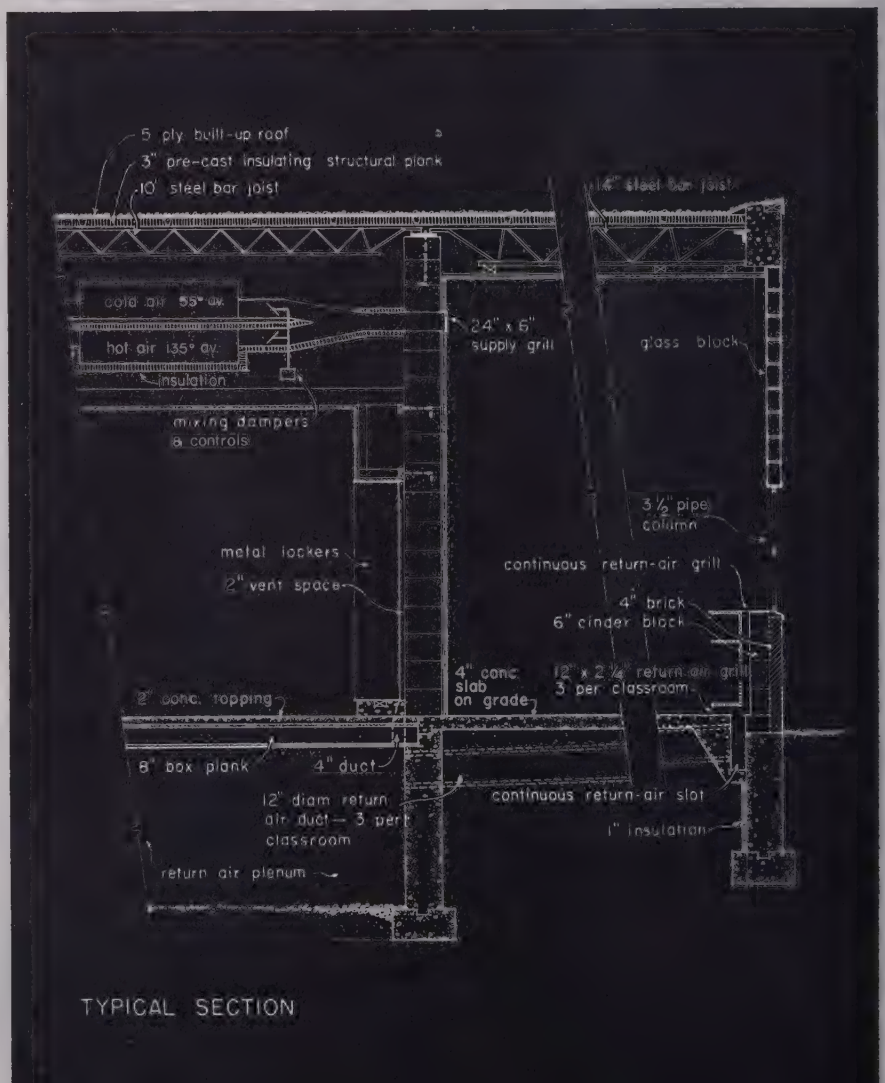
The heating and ventilating installation cost for this 640 pupil school is $125,000 or $1.98 per sq. ft., an unusually low cost derived mostly from its decentralization of fan rooms and its economical compromise between duct runs and pipe runs. Maintenance will be low thanks to concentration of equipment in easily accessible fan rooms.

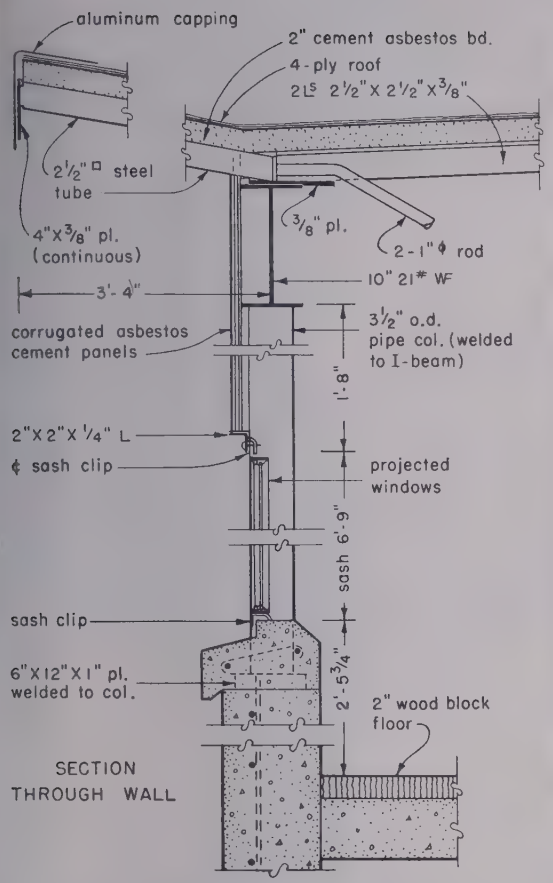
Architect for this Gordon Swift High School at Watertown, Conn. is Warren H. Ashley; Associate Architect: C. J. Malmfeldt; Engineers: Marchant & Minges.

***Temperature control** is effected at classrooms where warm and cool supply air is mixed.*











***Heat-absorbing windows** are welded directly to alternating pipe columns and mullions.*

5. LOW-COST GLASS WALLS

help reduce factory costs to $6.15 per sq. ft. without impairing quality

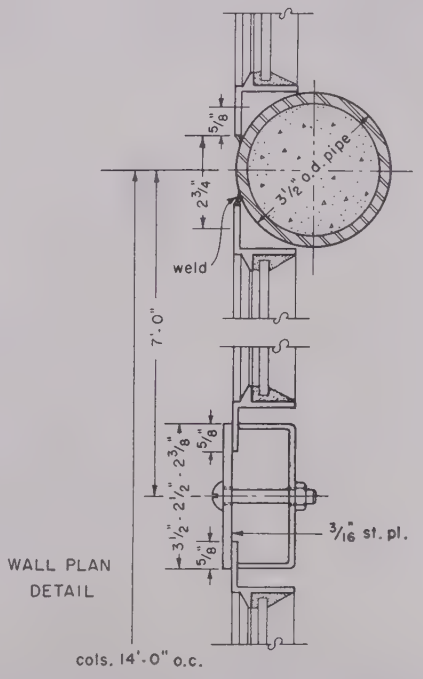
This small factory boasts quality construction at low cost. Its reinforced concrete walls, its 7′ high heat-absorbing glass set in aluminum-painted steel sash, its all-welded steel frame with 36′ clear span joists and insulated roof panels were put together at a cost of only $6.15 per sq. ft. Yet, thanks to sound engineering and the use of quality materials, this building was given a mortgage appraisal of $9.50 per sq. ft. by an independent consulting engineer.

Located in the expanding northern suburbs of Philadelphia, this 13,300 sq. ft. factory contains a 147′ x 74′ manufacturing area with only one row of 6″ lally columns down the center. A 2,000 sq. ft. semicircular office is at one end.

The factory is engineered for utmost simplicity in construction. A 5″ thick concrete floor is poured directly on a clay subsoil. Side walls are of 8″ wide, 24″ high reinforced concrete. The all-welded frame consists of lally columns and light open-web steel joists. Along the outside wall 3½″ columns are 14′ o.c. welded to 1″ thick, 6″ x 12″ steel base plates bolted atop the side walls. Interior columns are 21′ o.c., welded to 12″ x 12″ steel base plates atop concrete footings. Side-wall beams are welded directly to the tops of columns to eliminate separate capping. Open-web joists weighing 10.8 lbs. per ft. are 36′-8″ long and set 36″ apart with a pitch of ½″ per ft. down from the center line to the outside walls. They carry 2″ thick insulated roof panels (U value 0.15, weight 5 lbs. per sq. ft.) topped with built-up roofing.

Each 14′ column bay contains two 6½′ wide prefabricated steel window units tack-welded to the pipe columns. A 3½″ plate mullion joins the window units midway between columns (see diagram). The top lights of windows open outward for ventilation. They are protected from rain and summer sunlight by a 40″ overhang that is pitched upward to form a rain-water gutter.

This suburban factory was completed in July 1952 at a total cost of $82,000. Consulting Engineer: Ralph Wesley Jones.



***Window wall** extends around semicircular office at one end of factory*



Photos: (top) Chas. P. Mills & Son; (above) E. Fletcher Brown

PRODUCT NEWS

PRECAST LIGHTWEIGHT CONCRETE handles like lumber

When US Plywood's President Lawrence Ottinger announced last month the purchase of a brick business and the rights to manufacture a Sweden-born mineral building material, he was not straying far from the forest. *Zeprex*, the lightweight, precast concrete US Plywood will produce late this year, has natural appeal to woodsman Ottinger. Nailable, drillable and sawable, the load-bearing fireproof slabs also should draw accolades from the US building industry. (*Zeprex* already has received wide favor abroad. Europe annually absorbs 30 million cu. ft. in roof, floor and wall slabs, and in beams and building blocks. In the past 23 years, the amazingly elemental yet sophisticated material has seen service from the Equator to the Arctic Circle in all kinds of structures—hospitals, factories, homes.)



Roof-deck slabs, *primarily used for their thermal and acoustical insulation qualities, also provide a pleasant white finished ceiling surface. The 12′ x 20″ x 5″ sections of Zeprex are handled easily by two men.*



In application *the structural concrete may be drilled, nailed, sawed, or chopped like ordinary lumber.*

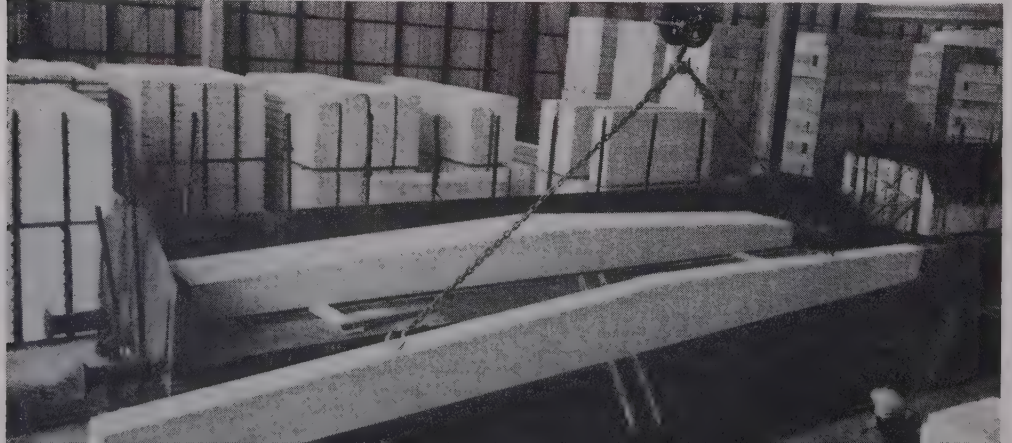
Processed in an autoclave, *Zeprex* is a chemical bond of silicaceous material, cement, and water, plus "x." Its basic component, monocalcium silicate, has a compressive strength five times that of concrete, so that even when the compound is expanded to increase its thermal value, *Zeprex* can more than hold its own structurally. Practical contractors will take to its build-ability as warmly as purist designers who will laud its monolithicness. Cooked to a seashell white, the unicellular mass is outside finish, inside wall, and insulating middle, all in one.

Manufacturer: US Plywood Corp., Weldwood Bldg., New York 36, N. Y.

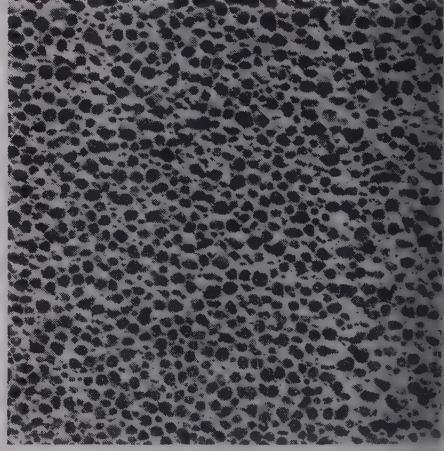
Safe total loads psf (safety factor—3)

Thickness	Span							
	4′	6′	8′	10′	12′	14′	16′	18′
3″	160	90	48	27	—	—	—	—
4″	227	147	106	72	50	31	22	—
5″	295	192	141	107	80	56	39	25
6″	365	232	175	136	107	79	57	40
7″	427	276	203	160	131	102	77	58
8″	485	315	233	180	147	122	98	75

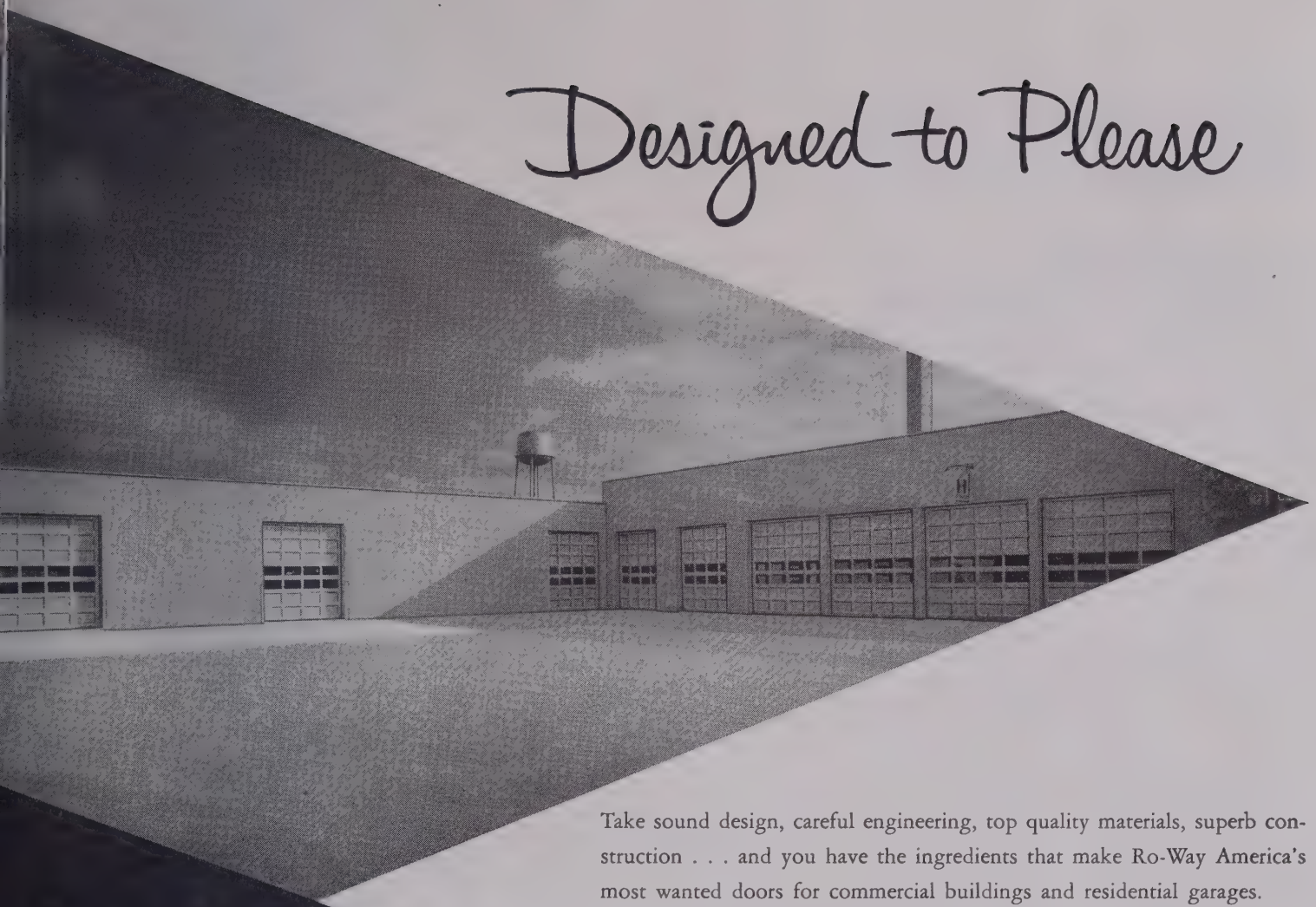
In storage: *various slabs processed plain, reinforced or prestressed and a precast 40′ reinforced beam*



Close-up *of the surface reveals the tiny air cells that make Zeprex an excellent insulator. Formed back-to-back in the chemical process, these cells yield no through-way to moisture and so also act as a vapor barrier.*



continued on p. 21



Designed to Please

Built to Satisfy

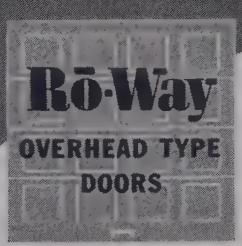
Take sound design, careful engineering, top quality materials, superb construction . . . and you have the ingredients that make Ro-Way America's most wanted doors for commercial buildings and residential garages.

From every angle, Ro-Way doors are designed to please. Clean, simple lines that blend with and enhance any style of architecture. Famous features that assure smooth, easy-up, easy-down operation: Taper-Tite track and Seal-A-Matic hinges; ball bearing Double-Thick Tread rollers; Power-Metered springs individually powered to the weight of each door.

And every Ro-Way door is built to satisfy. Mortise and tenon joints both glued and *steel* doweled. Muntins, rails and stiles squared up with precision. Sections rabbeted to assure weather-tight joints. Millwork both drum and hand sanded for finer finish. Heavy gauge steel hardware Parkerized *and* Painted *after* fabrication for maximum rust resistance.

So—*for every commercial building or residential garage*—specify Ro-Way and be *sure* of complete satisfaction.

there's a
Ro-Way
for every doorway



Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor.

SEE OUR CATALOG IN SWEET'S

ROWE MANUFACTURING CO.
923 Holton Street, Galesburg, Illinois

300-bed St. John's Hospital in Springfield, Mo., reflects progressive techniques in architectural design. Maguolo and Quick, St. Louis, architects and engineers; Gustav Hirsch Org., Inc., Columbus, Ohio, electrical contractor.



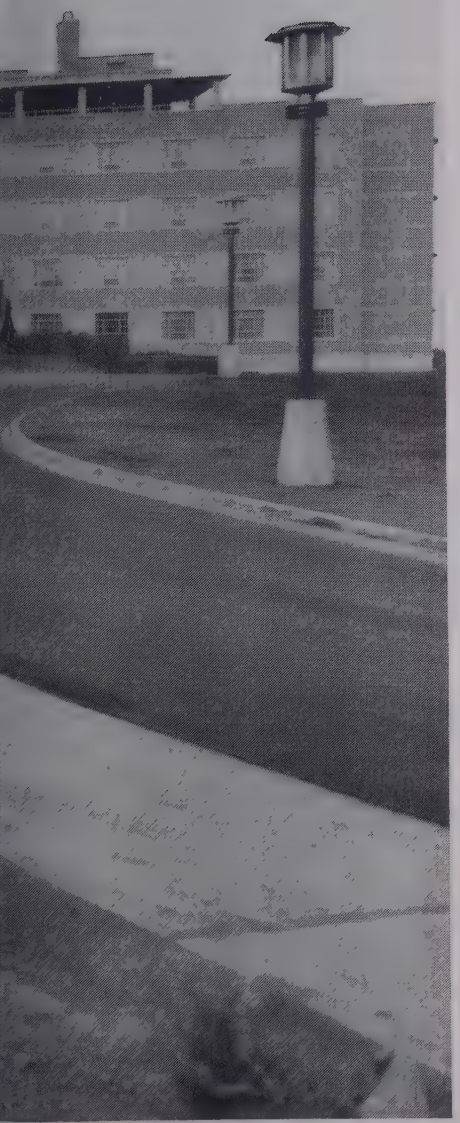
Westinghouse Control and Power Center was fabricated at the local Westinghouse plant especially for the hospital. Control center operates ventilating motors. Power center steps down 480 volts to 120/208 volts for lighting loads.



Westinghouse Air-Cooled Center, 300 kva, 480/208 volts, 1000 ampere convertible dist panelboard. One of nine, this factory-assembled unit saves space . . . minimizes layout pr

**Electrically, it's Westinghouse...
in St. John's Hospital**

Where modern power is matched to modern architectural design



The new St. John's Hospital in Springfield, Missouri, reflects the most progressive techniques in architectural design. Moreover, its system for distributing electrical power is as modern as the building—assuring a high degree of service continuity.

This reliable power system was planned during the blueprint days by the architects and engineers, with Westinghouse assistance. It provides for two primary feeders with dual switching and control equipment. Further, if the incoming power supply is interrupted, an engine generator keeps essential services in operation.

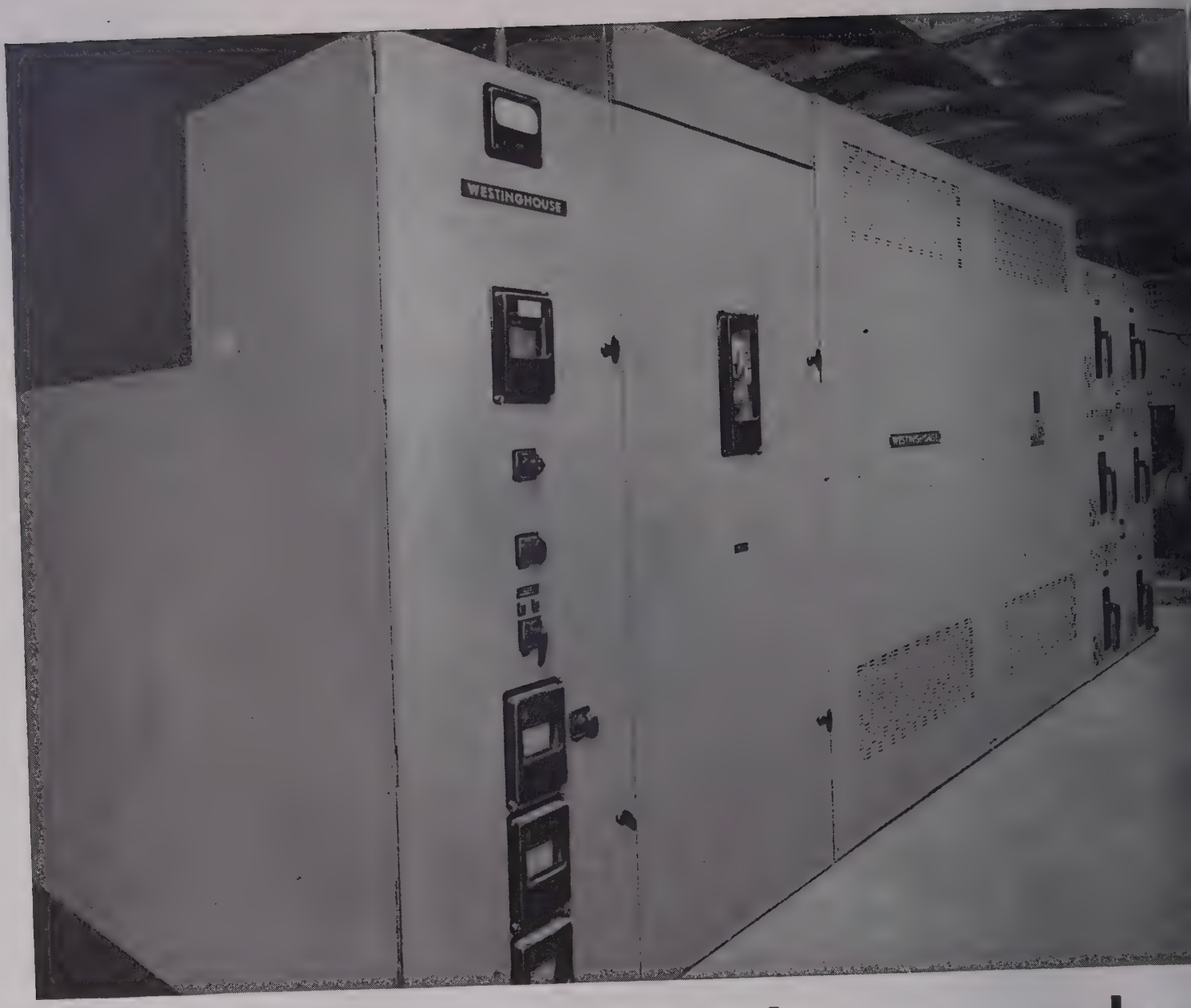
Bus duct feeders distribute power throughout the hospital at 480 volts. Motors are supplied this voltage through control centers, while 120/208-volt lighting and appliance circuits are supplied by "Triplex" power centers.

Westinghouse unitized power and control centers are located in every section of the hospital. Placed near the loads they serve, these compact units save valuable space . . . minimize layout problems.

In every building, the design of the distribution system is a vital consideration. It must be planned early . . . tailored to individual requirements . . . matched with well-engineered equipment.

Westinghouse builds apparatus that gives you more freedom in design techniques . . . and backs it up with technical assistance to help select the right distribution system for your building. For complete information, call your nearest Westinghouse office and ask for the construction application engineer. Or write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94966

YOU CAN BE SURE...IF IT'S Westinghouse



They got the most for their money today and easy expansion for tomorrow

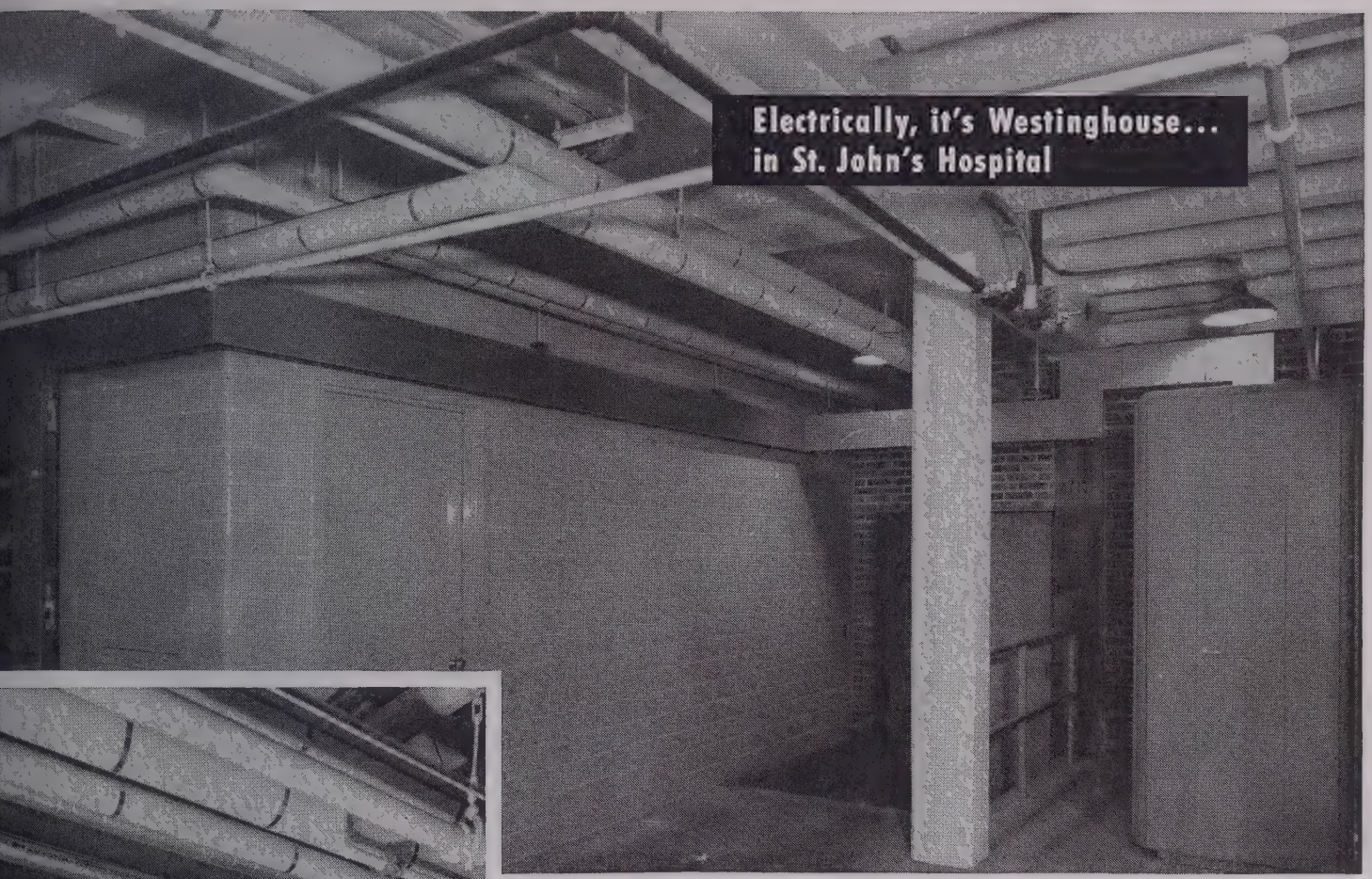
This power center is the heart of the power system at St. John's Hospital . . . and it shows sound planning by Maguolo & Quick and Westinghouse.

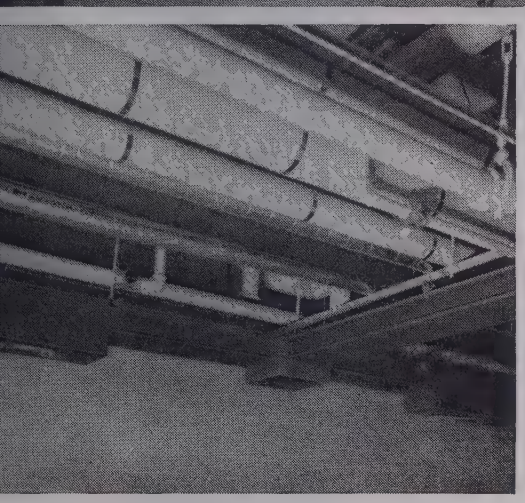
St. John's wanted their electrical dollars put into working equipment, not stand-by capacity. But they also had to allow for future expansion. So they chose a Westinghouse Power Center with the ASL Air-Cooled Transformer, which is completely safe and doesn't require a vault. Provision was made for future air-blast equipment, so that as the load grows, transformer capacity can be boosted with slight increase in cost.

The end units house air circuit breakers wh provide protection for the incoming line and 480-volt power feeders which serve the hosp Controls are so arranged that a stand-by di generator automatically cuts in and supp operating rooms and other vital circuits if ut power should fail.

For complete information about Westingh Power Centers, ask for Booklet B-4 Westinghouse Electric Corporation, P. O. Box Pittsburgh 30, Pennsylvania. J-

YOU CAN BE SURE...IF





Power for the boilerhouse! Here, 600-ampere duct feeds the 300-kva sub-power center in the boilerhouse. Note how duct hugs the wall. This run is over 400 ft. long.

Tee for two! Here an 800-ampere main feeder connects with two 600-amp branch feeders. Tee is one of several standard units. Note circuit breaker cubicles for overload protection.

us duct minimized power loss, natched perfectly with building plans

e choice of Westinghouse Bus Duct to carry ver in St. John's Hospital was highly suitable to client, the architect and the contractor.

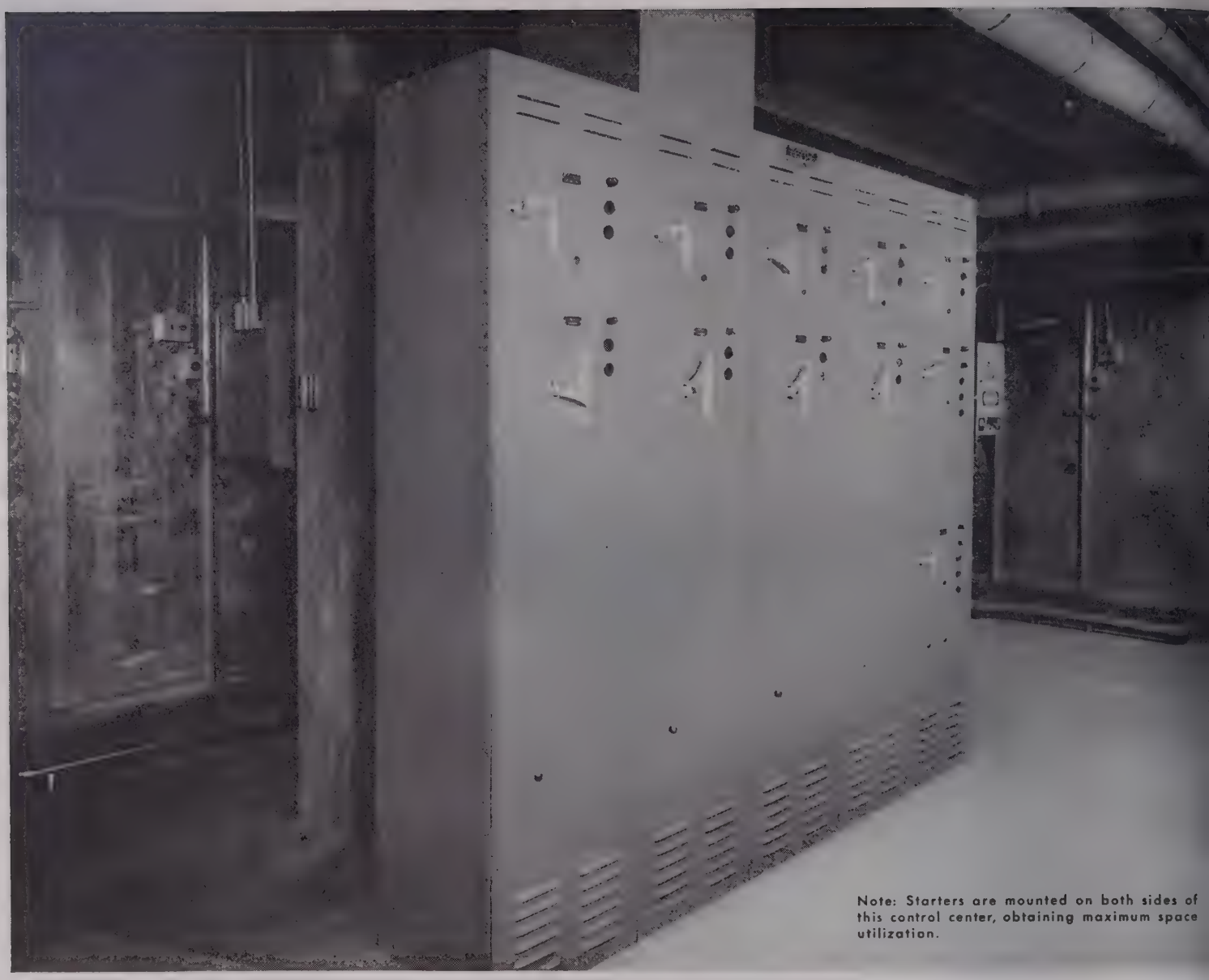
Of prime concern was the possible power loss carrying 480 volts the considerable distances ween the main and sub-power centers. Bus duct nimized this loss, assuring distribution economy. Bus duct matched perfectly with building plans. ndard lengths, elbows and tees, plus specially ricated sections, made it easy to fit the runs into structure, around obstructions.

Installation was fast, simple. Pre-assembled in advance of the installing crew, sections bolted together easily; were swiftly mounted with sliding cantilever and "C" type hangers.

These advantages, plus reliability, reduced maintenance and flexibility to handle additional loads without expensive rewiring, make Westinghouse Bus Duct ideal for institutional, commercial and industrial buildings. For full details, see your Westinghouse Representative, or write for B-5835, Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa.

J-30159

Vestinghouse



Note: Starters are mounted on both sides of this control center, obtaining maximum space utilization.

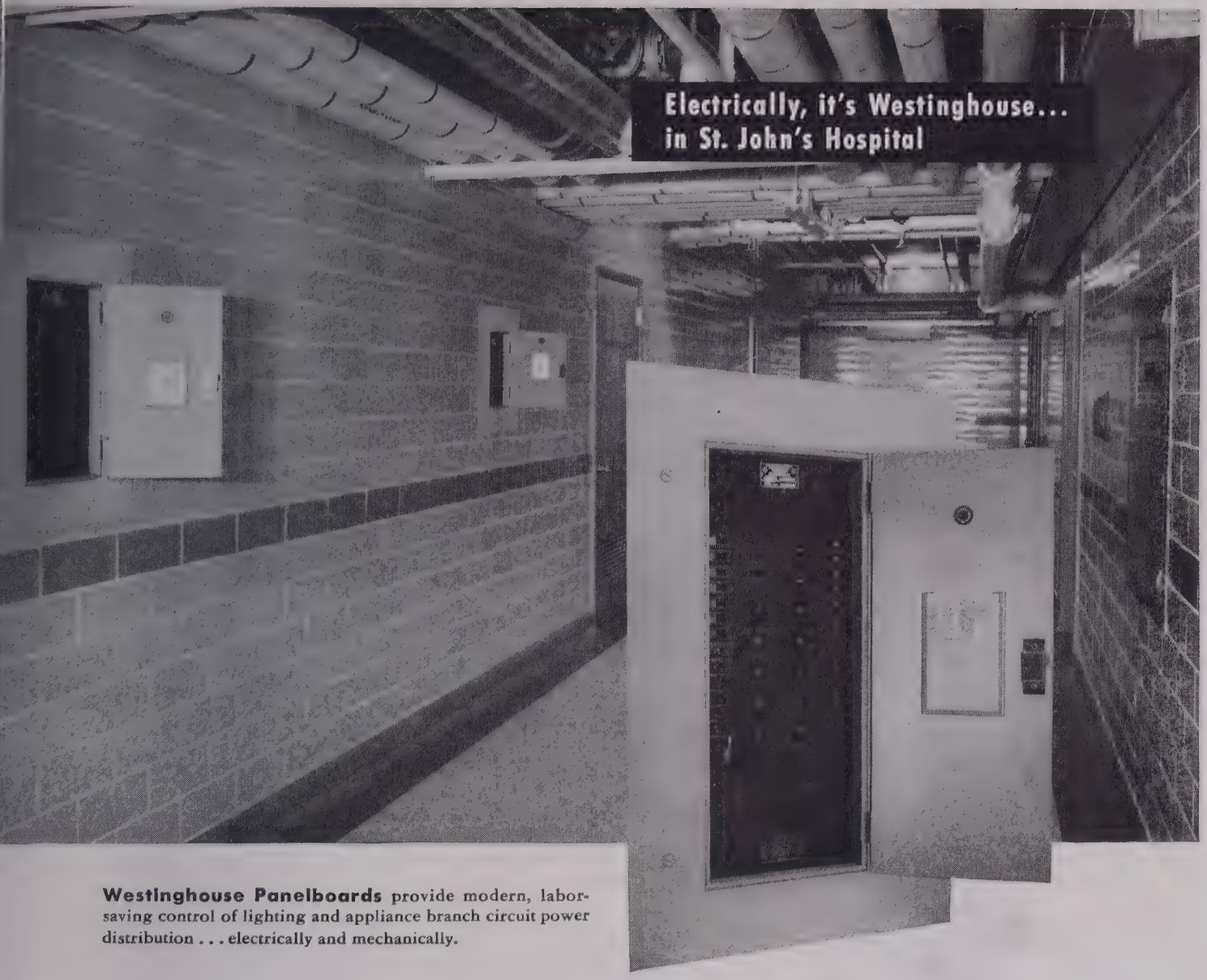
Designers select control centers for substantial savings

Motor control was needed for the ventilating fans and compressors at different locations throughout St. John's Hospital. "We specified control centers because of their lower over-all cost for this job," said G. E. Quick, consulting engineer.

"We were sure," Mr. Quick reported, "that grouping controls in one location would cut installation costs up to 40% and save on maintenance in the future." Westinghouse Control Centers install easily. Factory built at a nearby Westinghouse plant, each control center was individually wired, tested and shipped to the job, ready for operation. Becaus the single enclosure of the Westinghouse Contro Center houses all necessary starter units an wiring, it leaves the surrounding wall are free and clean.

Westinghouse Control Centers offer other advan tages for greater safety and flexibility to meet an motor control problem. For further information write for Control Center Booklet, B-5621 Westinghouse Electric Corporation, P. O. Bo 868, Pittsburgh 30, Pennsylvania. J-2703

YOU CAN BE SURE...IF I



Westinghouse Panelboards provide modern, labor-saving control of lighting and appliance branch circuit power distribution . . . electrically and mechanically.

Circuit breaker panelboards cut maintenance, eliminate unnecessary power outages

The electrical nerve centers of St. John's Hospital are 89 Westinghouse Circuit Breaker Panelboards. These panels provide maximum circuit protection and minimize interruption of the services so vital in a hospital. And, with fuses eliminated, they cut maintenance time and cost.

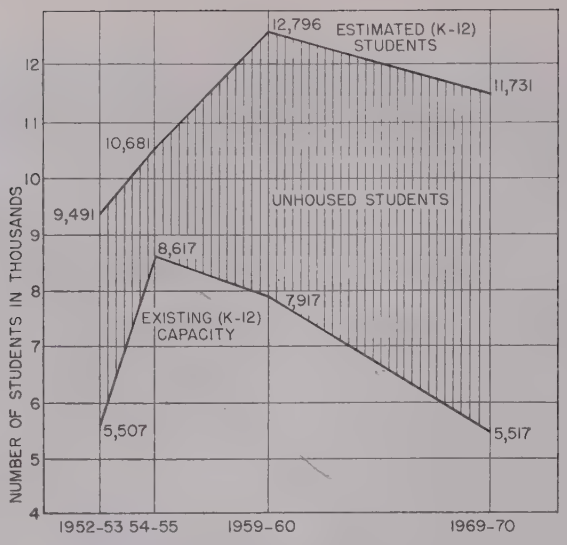
The hearts of these panels are the famous Westinghouse De-ion® Circuit Breakers. They trip instantly on short circuits and dangerous, high overloads, but ride out temporary, harmless overloads. *Unnecessary* power outages are ended. Circuit breaker handles provide positive trip identification when breaker has opened automatically. When faults are cleared, a flip of the handle restores power.

On standard lighting panelboards, each circuit and the bus to which it is connected is clearly and permanently identified. Ends costly ringing out of circuits. This and other quality features of Westinghouse Panelboards can cut job installation costs.

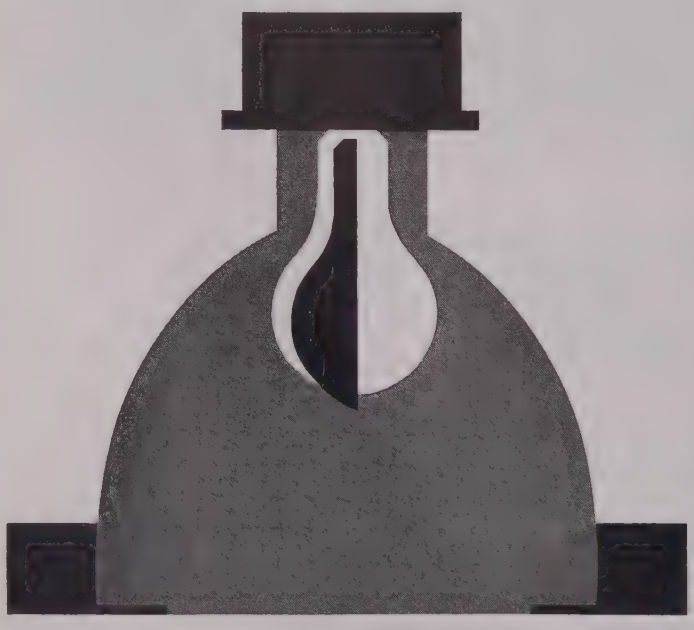
There's a Westinghouse Panelboard to answer every circuit protection problem. Thirteen assembly plants assure prompt service and quick delivery throughout the country.

For the full story, call your Westinghouse Representative, or write for B-5260-A, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-93499

Westinghouse



***Brightest moment** in the Back-A-Town school situation will come in 1954-55 when four new schools are completed. Loss of utterly worn-out old schools will then make situation worse. School village is intended to close the gap. Study is by Henry Deyo, statistical planner on Colbert's staff. Frances Fort is technical researcher.*



no other recessed lighting instrument offers all the practical advantages of Century's series 930 ellipsoidal Downlite . . . compact, low in cost, uses general service lamps . . . bulb just screws in from below—no plate to open . . . eye comfort is assured by the extremely low brightness of the opening—which is small . . . the bottom of the unit is absolutely flat and smooth (no bumps in the ceiling plane) and the precision reflector is Alzak Processed for permanent efficiency

CENTURY LIGHTING, INC., 521 WEST 43RD STREET, NEW YORK 36
626 NORTH ROBERTSON BOULEVARD, LOS ANGELES 46

VILLAGE SCHOOL *continued from p. 134*

Thomy Lafon is a good sample of the informal, nonimposing architectural character Colbert's office is after in the school village. All buildings will be one or two story, will emphasize the small scale and autonomy of the basic units, not the big scale of the whole project.

The biggest design headache will be: how to allow many different firms to design the different schools and units with optimum professional freedom, yet assure the whole thing will hang together?

As in all jobs for the school board's current construction program, private architects will do the work on a flat 6% fee basis. Architect Colbert gets no fee for his master plan because he worked it out while he was a salaried employee of the school board.

Something new in administration

The first unit to go up will be the high school, scheduled for 1954-55 construction. Other units will be added gradually over the next 15 years as old Back-A-Town schools reach the last stages of decrepitude.

Administration of this giant collection of schools will be something new for public schoolmen; it bears some analogy to university administration. Colbert's planning office visualizes it this way:

Each of the 11 schools will be an autonomous unit with its own chief. Like any ordinary principal, he will administer the educational program, help teachers, deal with parents, but will be relieved of routine responsibilities of physical plant maintenance and supplies.

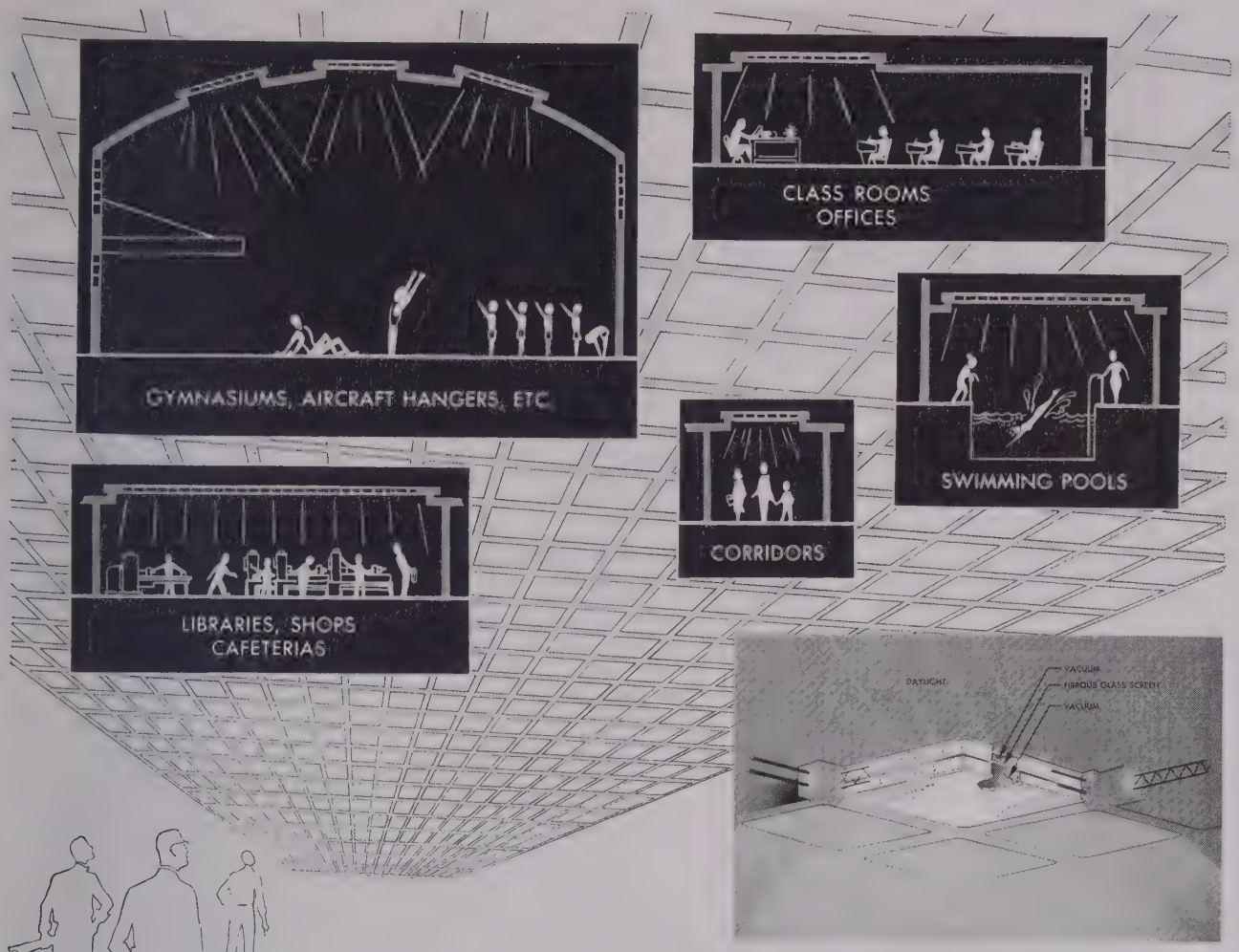
Each of the four big groups of schools (one secondary, three elementary) will have an administrator somewhat like the usual public school "area supervisor," somewhat like the dean of a college within a university. He will absorb most routine operating responsibilities, will oversee educational policy and general competence of teachers and principals in his group. Top man in the village will have a job something like a university president's; as Colbert's office and the school board envision it, he will scrupulously leave operation of the individual schools up to his principals and "deans."

That wonderful $11 million

The thing that makes the school village so alluring of course is simply its flabbergasting land savings. The board bought the 90.2-acre site in suburban Gentilly (six miles from Back-A-Town) last year for only $300,000! In Back-A-Town, 90 acres would cost at least $9 million and the "equivalent" 115 acres would come to at least $11,380,000.

Colbert estimates construction costs on the school village at $10 to $12 million. In other words, land and buildings for about the same as equivalent land alone in Back-A-Town. Incidentally, $11 million worth of property *not*

continued on p. 178





Here's a new approach to *toplighting*

Skytrol glass blocks—a new toplighting medium—now give the architect a sturdy, flexible design unit that overcomes these three big objections to skylights: high heat loss, condensation and costly maintenance. The double cavity created by the fibrous glass insert gives the Skytrol Block a "U" value of .44, thus reducing heat loss and practically eliminating condensation. These new skylight blocks are self-cleaning, and they reduce other maintenance costs to an absolute minimum.

Skytrol panels are installed only slightly above the roof line, in concrete, thus they do not create unsightly superstructures to interfere with clean, modern lines. Each block is 11¾″ x 11¾″ x 3⅞″ and contains an integral fibrous glass diffusing screen and corrugated bottom face to diffuse the light and spread it throughout the room.

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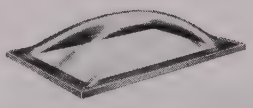
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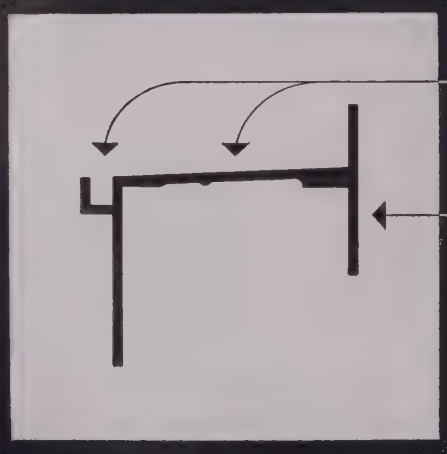
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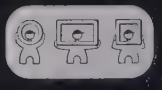


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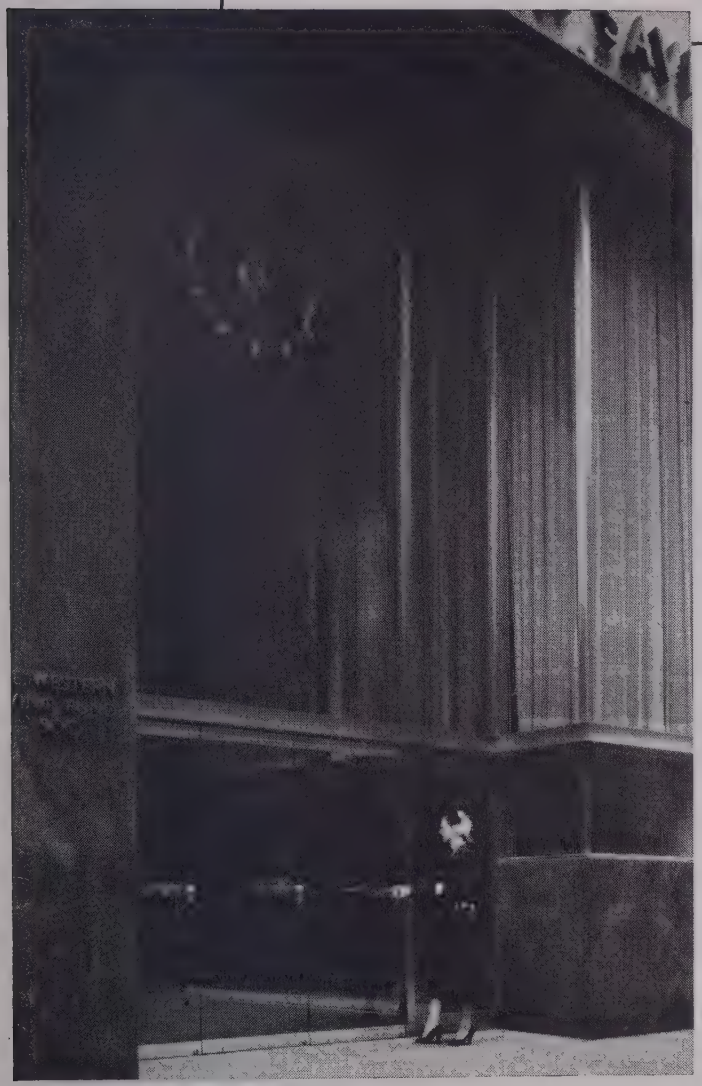
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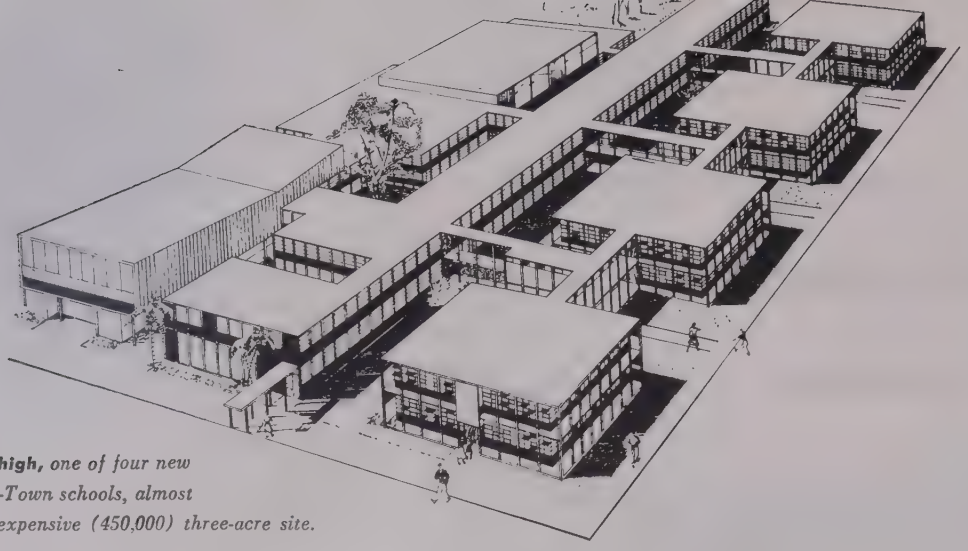
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Junior high, *one of four new Back-A-Town schools, almost covers expensive (450,000) three-acre site.*

VILLAGE SCHOOL *continued from p. 135*

bought in Back-A-Town will bring the city school system somewhere between $42,000 and $61,000 a year in school tax money (total taxes on $11 million in real estate come to something between $85,000 and $123,000 a year).

A century of bus rides

Transportation costs are insignificant compared with the land savings.

New Orleans school-bus costs have been running high because New Orleans uses regular public service drivers at union wages. Even so, transportation cost per year (including repairs, depreciation, administration) would come to $108,283, and $11 million would pay for 102 years of it. If retired men, housewives and teachers are employed to drive at nonunion wages (which Colbert thinks will happen when a big transportation program is adopted), annual costs will drop to about $61,000.

Pupil density in Back-A-Town is so heavy that each bus can be filled at a single pick-up point which cuts running time from pick-up to school village to about 20 min. Pick-up points will be every four blocks; students will walk a maximum of two.

The few Negro residents near the school village site need schools badly and they favor the project. Their children will be accommodated along with the Back-A-Town migrants. Elsewhere in the city, including Back-A-Town, neither support nor opposition has yet developed and there has been surprisingly little discussion of the plan by educators in New Orleans or elsewhere.

The citizenry, having turned its back on the school conservatives, appears to regard the Pied Piper plan as just one among many gratifyingly lively doings of their gingered-up school board. The board has been publicizing the scheme for months and plans to present it officially when a concrete proposal for the high school is ready for public consideration.

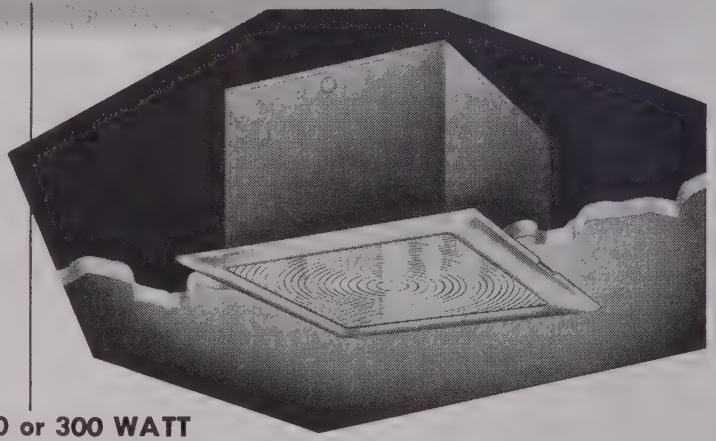
The big "if"

If the village scheme works out as well as Colbert hopes, he sees it eventually supplanting the neighborhood school altogether. He points out that it is a natural for coping with the phenomenon of the one-age suburb, would provide a way of using all schools to capacity for their full potential life.

"In this era of rapid transit, of commuting between suburb and city," says Colbert, "it seems logical that the schools should follow the general pattern."

But like the good, hardheaded planner he is, Colbert is keeping that *if* in mind. He thinks of the first school village as strictly a pilot plant, says he would not want another planned for New Orleans until the first has been in operation long enough for planners and educators to see what it does to children, teachers and the community.

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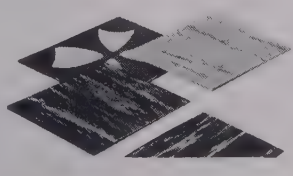
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(Continued from p. 135)

mate role in community life for which the new Thomy Lafon is so admirably planned.

What of the opposite side of this coin—the influence the community will exert on the school village? Half the battle is already lost when a neighborhood feels no real sense that the school belongs to it. The other half of the battle depends on how well the autonomy of the school village units can be maintained, how well the safeguards against regimentation work out. Colbert envisions a PTA for each 525-student unit and a council of representatives from these for each 1,575-student unit. He realizes that if the whole school village has to be involved in every proposed modification or innovation, the PTAs will die of frustration.

The trouble with this planning is that most of the safeguards against size and regimentation are not built in as they are in the well-planned neighborhood school. They are superimposed extras, easiest to sacrifice when the next urge to save money, or make things easier for the administrators, comes on.

But, after all, a school is primarily for teaching and nurturing children. How does the size and location of the school village affect them directly?

Step or a leap?

School represents a big step for small children, even when it is just around the corner and half the faces are familiar. The leap from Back-A-Town to the school village kindergarten is about as abrupt and bewildering a change in environment as anyone could conceive.

Colbert thinks the question of keeping the little child near home is academic in Back-A-Town. Many of the pupils are what were known during the war as "latchkey" children; there is no one to take care of them during working hours. The school village, with its staggered afternoon bus schedule, will help solve that problem. Also, he points out, a pretty nasty environment is being exchanged for a pretty nice one.

He advocates that each elementary school in the village serve a corresponding geographical neighborhood in Back-A-Town and thus help cut down the element of strangeness.

This is meaningless of course if the school village elementary units are set up to house two or three grades each, as shown in the preliminary scheme, instead of a complete K-6 school. While a 525-student unit made up of two grades meets the letter of the ideally sized elementary school, it hardly fulfills the spirit. A "neighborhood" big enough to embrace 1,575, 5- to 11-year-olds includes an overwhelming proportion of permanent strangers. Not even the present, poor Back-A-Town schools were planned for loads like this; they got that way by being used far over capacity.

Colbert reports the question of the two-grade unit or the complete K-6 unit has not actually been decided, will await debate by the educators.

An educational factory?

The threat of an educational factory also hangs partly on whether two or seven grades are included in the basic 525-student units, partly—again—on how well the administration can withstand the temptations of uniformity. Whether the scheme becomes a mill—with its emphasis on the general—or whether it retains the diversity that builds up naturally from attention to the specific, depends on the personnel. No more and no less can be said of any centralization.

At best, starting to school for a Back-A-Towner is going to mean an abrupt trip out of one world into another. (When you read this, think of your own first day at school.) And as he gets older, it is going to be hard for him to understand any connection be-

continued on p. 190

Is the Architect's business leaking away through these floors?

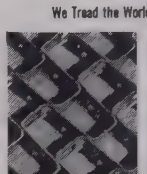


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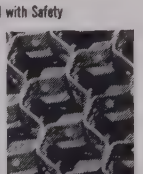
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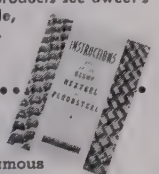


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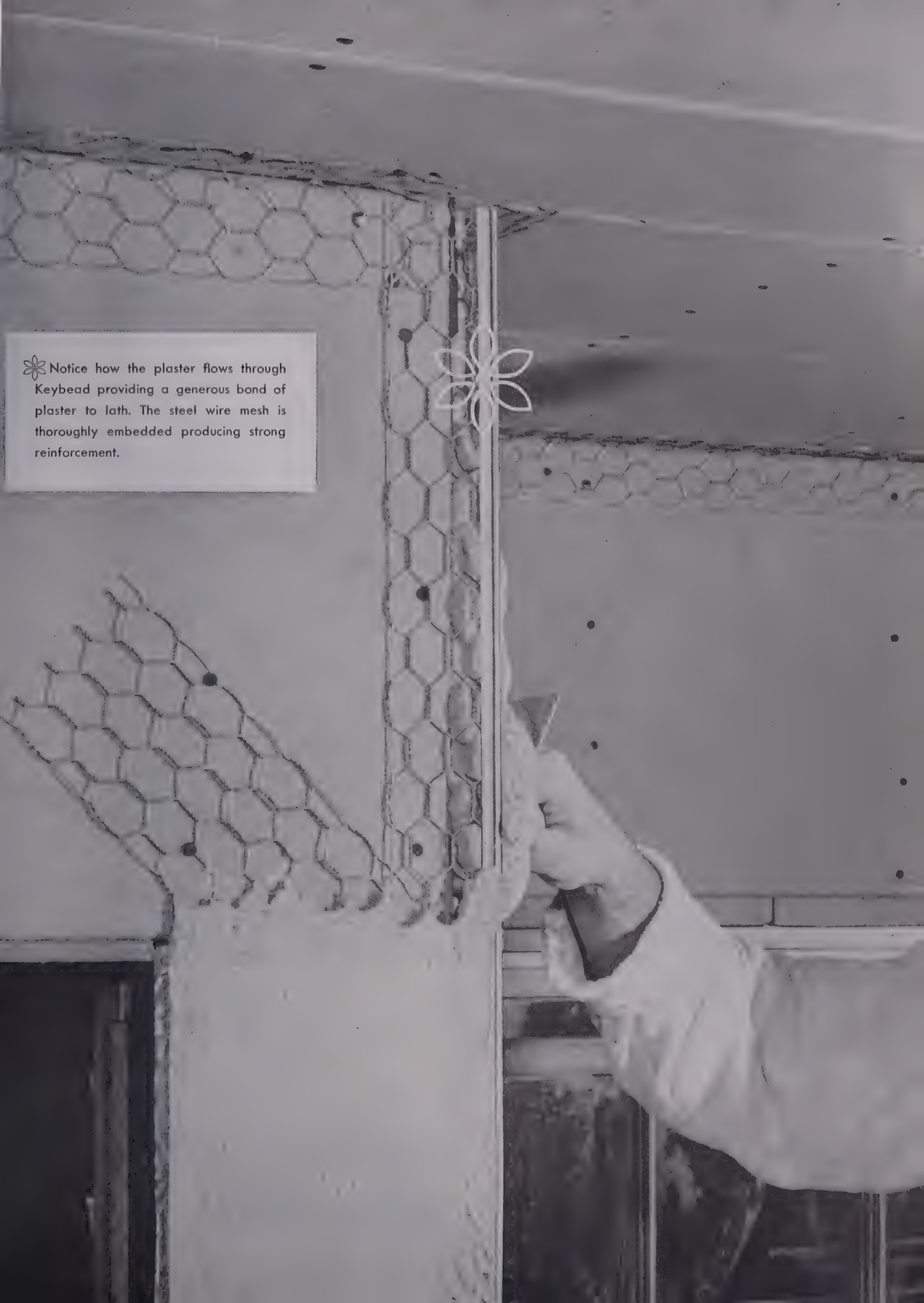
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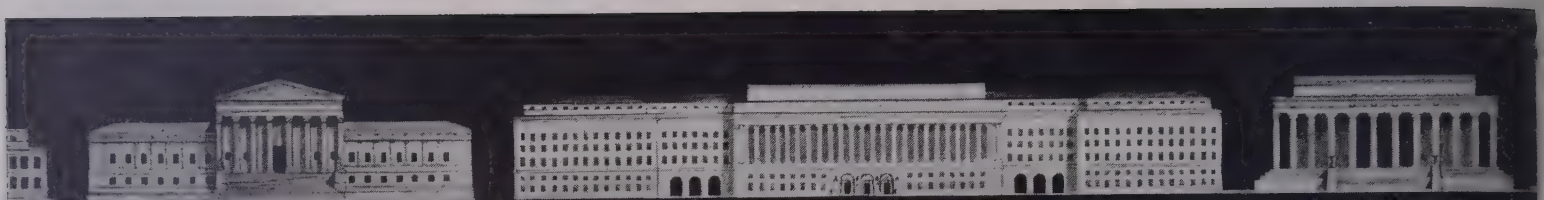
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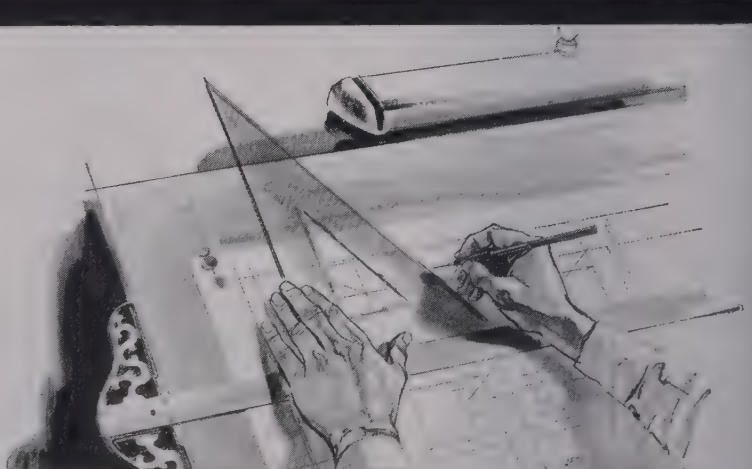


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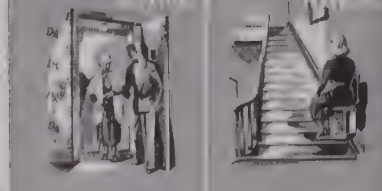
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WHO PAYS THE PIPER *continued*

tween the business of going to school and the rest of the business of living. Today teachers try hard to show children that what they are learning is involved with what else they know of life. What are we to think when the very plan of the school plant counteracts and negates the pedagogical philosophy taught there?

An idea for luckier places

For Back-A-Town with its overwhelming collection of problems, going far deeper than the question of school plant, the school village may be the only tolerable way out of an intolerable situation.

More fortunate communities pondering the advisability of the scheme might well adopt at least one of its ideas: the consolidation of separate junior and senior high units on a big, low-cost suburban plot. Small and medium-sized towns have been putting their high schools on the outskirts, but this is a new idea for the big cities with the big slums.

It is the secondary schools that need the most acreage; their students are ready to fare forth from neighborhood shelter; with encouragement the students are old enough to exert, themselves, some voice in the schools.

A combination of the secondary school village with neighborhood elementary site savers like Thomy Lafon or convertible schools (AF, Oct. '51) might go a long way toward raising the standards of city schools at reasonable expense.

Some puzzling questions

But when schoolmen weigh the advantages of the school village for lower grades they will need to ask themselves some puzzling questions—questions like these:

- Which is more necessary for a child: an adequate playground or a sense of neighborhood roots?
- Which is harder on a first-grader: climbing three flights of stairs to class or riding six miles from home?
- Which is the greater good: use of the schools as community centers or special classes for the handicapped?

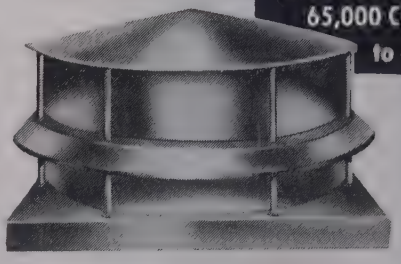
These are not simple questions. There is nothing black-and-white about them.

The tangible beauty, charm and spaciousness of good schoolhouses are easy to recognize as excellences. The queer, complicated excellences that are able to abide with happenstance ugliness and inefficiency—but not with imposed perfection—are harder to see; and how are they to be valued? What is the worth of a PTA that aggravates a principal as much as it supports him? What is the worth of a paper boat in a sidewalk puddle between home and school? It takes some mighty delicate scales to find the answers, but the answers are vital.

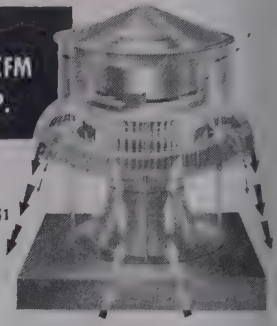
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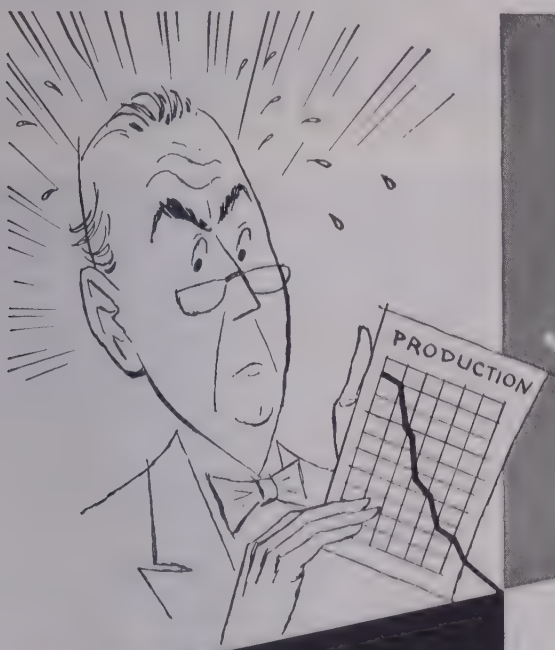
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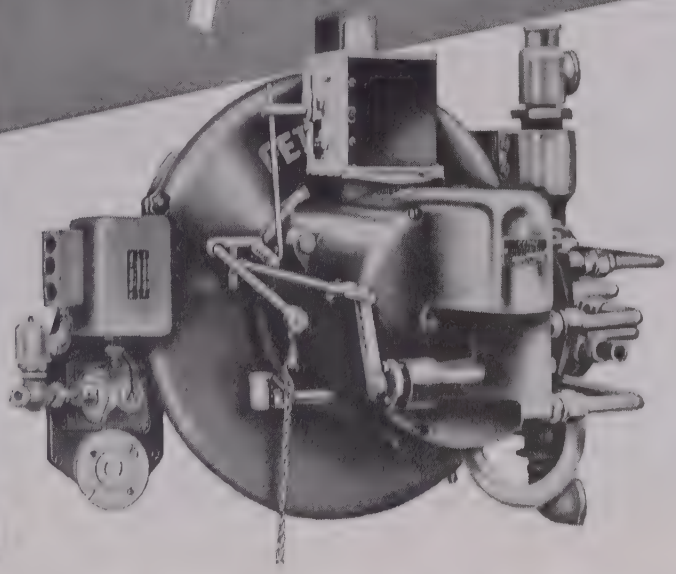
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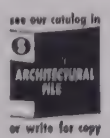
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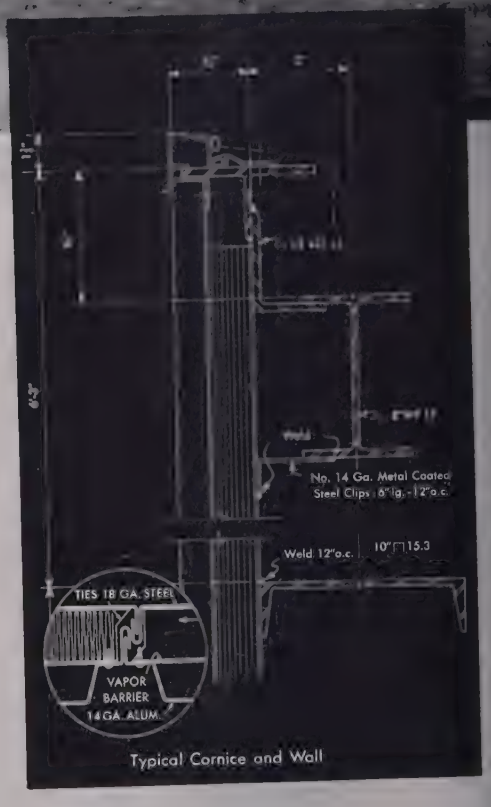
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Details of wall and roof
Watauga Dam control building

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HAVE FOUR THINGS IN COMMON



South Holston Dam powerhouse

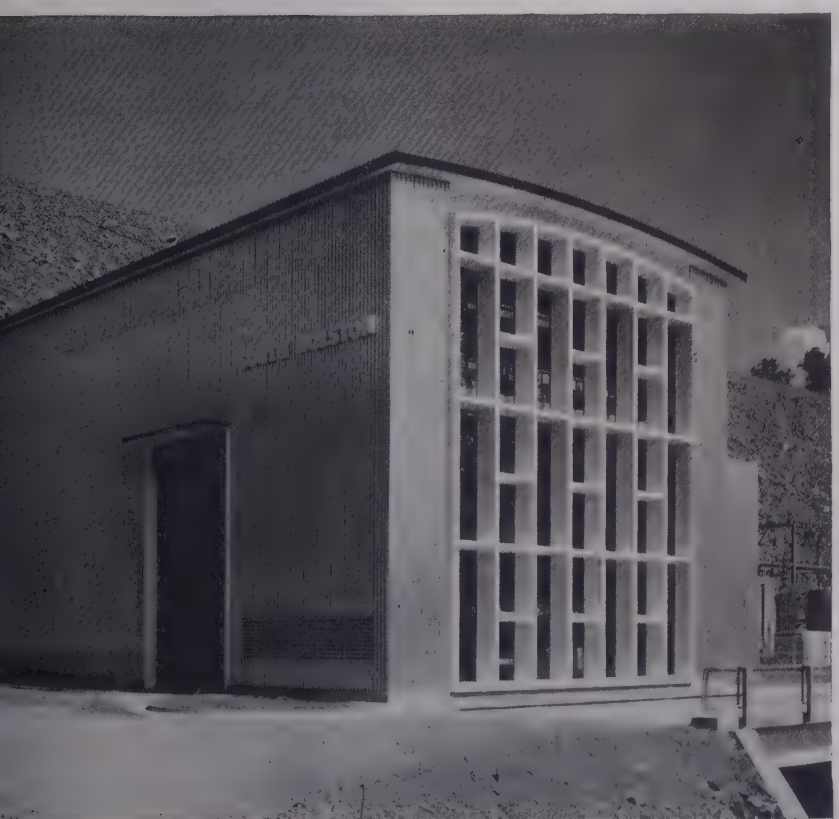
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FRANK LLOYD WRIGHT TALKS TO AND WITH THE TALIESIN FELLOWSHIP. Three long-playing (33 1/3 RPM) microgroove records (six sides) pressed but not recorded by Columbia Records, Inc. Copyright by the Frank Lloyd Wright Fellowship. Price $5 per record.

Several years ago Frank Lloyd Wright delivered a memorable address before the convention of the American Institute of Architects in Houston, accepting the AIA Gold Medal. Luckily his words—probably the most stirring statement ever made by any architect—were preserved on a disc when he delivered them, and astute national AIA officials later performed a real service by making his speech available in record form. Since then, 160 sets of these records have been ordered from the AIA, and the demand, rather than slacking, seems to be steady.

This is another neat accolade to the man who is more than merely an inspirational architect, but has become the central figure of esthetic defiance of our age, a conscience not only for his own profession, but for all other artists as well, and for all others *the* individualist. That Wright's long, stubborn, scornful, principled struggle has been successful is a reassuring truth in a dogmatic world.

Now here is a new set of three long-playing records of Wright in a more relaxed mood. On them he talks about acoustics, reads fragments from Walt Whitman, discourses on *Man or Machine*, and repeats his address to the Junior AIA meeting at the New York AIA convention in June, 1952. The content of these records does not equal the magnificent address at Houston. Technically they have quite a few background acoustical klumps and birdies. They are not edited sufficiently, and do not follow their labeling precisely—at one point the listener is promised Frank Lloyd Wright improvising on the piano, but no piano is heard.

But they may some day be precious all the same, because they do this: They permit an intimacy with the fact of Wright's personality, which is as vivid as his great architecture. In these records he is sometimes ornery—as in the sides which eavesdrop as he talks with fellows of his Taliesin fellowship about man and the machine; at other times wryly humorous—as when he advises young architects to do the whole job of building houses: designing, contracting, landscaping and interior decorating, because then their fees will be 40%; at times sharply critical—as in this passage on education: ". . . Teaching today seldom gets down to the elemental bottom—the truth. . . . That is because the teachers were taught facts, which is what they teach, instead of truth. . . . And as you all too well know now, architecture, modern architecture especially, is still chiefly concerned with effect. Effects are charming, or they're ugly, or they're desperate, or despicable, but why? . . . Seldom is the endeavor of our day and time concerned with principles, with causes. . . . Young artists aren't taught to ask *why*. You can ask *what*, and *when* and maybe *where*, but never *why*. That cannot be true education."

But more than anything else Wright is resonantly noble, as in his final words, added as an afterthought when he has already brought the talks to a conclusion and has said good-by:

"One thing more. Consider that you as young architects are to be the pattern-givers to American civilization. There can be none other pattern-givers than our architects, so if we in America ever do have a culture of our own you must be the way-showers. A civilization is only a way of life. A culture is a

continued on p. 198



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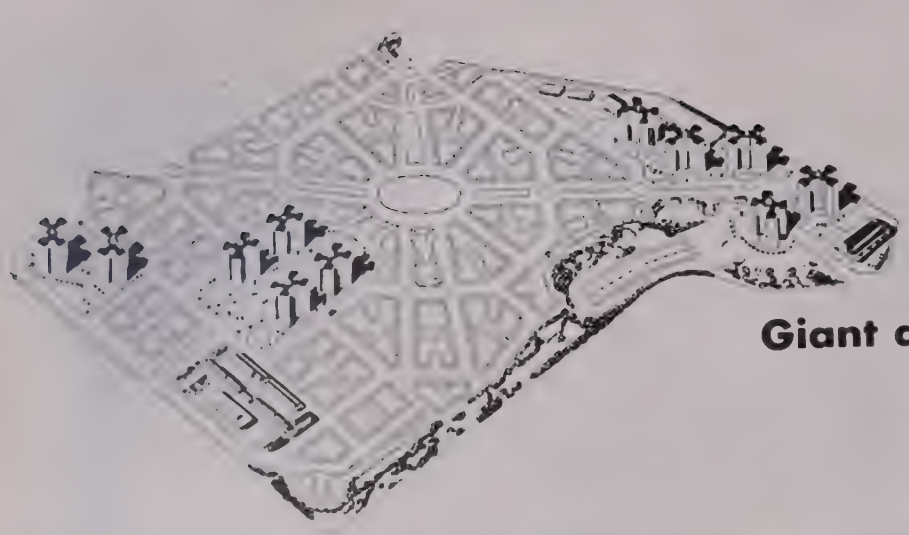
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Giant apartment project demonstrates

Situated in park-like 200-acre tract, development consists of eleven 13-story cross-shaped units, 110 2-story colonial units. Plywood forms were used for all concrete.

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way of making that civilization beautiful or that way of life a beautiful way of life. So culture is your office here in America and as no stream can rise higher than its source, so you can *give* no better to architecture than you *are*. So why not go to work on yourselves to make yourselves be in quality what you would have your buildings be? . . . "

MANUAL OF HOSPITAL MAINTENANCE. American Hospital Assn., Chicago, Ill. Publication M22-52. 116 pp. 6″ x 9″. $1.50

This common-sense pamphlet gives a great deal more than its title promises. It covers a narrow subject so broadly and so well that it should circulate far beyond hospitals. Administrators of almost any sort of institution might profit from much of its material.

The manual does not go into detail on just how to care for specific pieces of equipment. (For this purpose it recommends a triple file of manufacturers' instructions, one copy to be kept in the maintenance engineer's office, one in the foreman's office and one to be used on the job by the workman.) It is not even meant primarily for maintenance men—although a wise administrator will see that they get a copy. It is a guide to maintenance policy, problems and organization for executives and board members.

The pamphlet is as much involved with maintenance people as it is with objects to be maintained—and it is delightfully realistic about both. It sketches in the conflicts between housekeeper and engineer, tells precisely how a clerk can aid a maintenance supervisor, goes into the subject of prestige for maintenance men and the problem of revising everyone's attitude toward maintenance when an old, loyal, low-salaried and limited maintenance chief finally retires and is replaced by a more capable man.

The discussion of preventive maintenance —what it means, why it saves repairs, and just what it entails, is particularly good.

PLANNING ELEMENTARY SCHOOL BUILDINGS. By N. L. Engelhardt, N. L. Engelhardt Jr., Stanton Leggett. Architectural Record, 119 W. 40th St., New York, N. Y., 275 pp. 9″ x 12″. $12.50

Happy is the school architect who works with a good educational consultant or a creative and articulate superintendent. For those who do not enjoy this good fortune (and it is not unknown for an architect to find he has to initiate educational ideas!) this book is the next best thing. And may he work with a school board that has read it too.

Messrs. Engelhardt and Leggett, famed educational consultants themselves, do not attempt to lay down any laws on school architecture. Instead they explain just what is going on inside of elementary schools today, and why, and list the physical facilities that these doings require.

Since they cleverly organize much of the material by activities (for example, under classrooms: growing plants, cooking, using records, etc.) the book is equally useful for progressive or conservative schools, lavish or narrow programs. And embedded throughout are thousands of useful tidbits such as a reminder that teachers are apt to get lots of books and packages in their mail or an explanation of just how milk distribution is handled.

For architects who have become overly infatuated with tricky school lighting, this book should be required reading. First of all, it

continued on p. 202



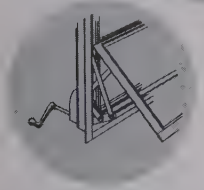


Pinches Maintenance Pennies

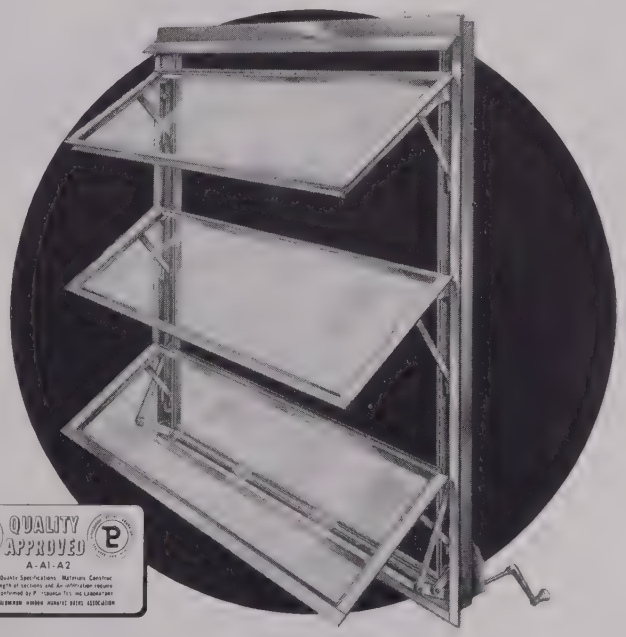
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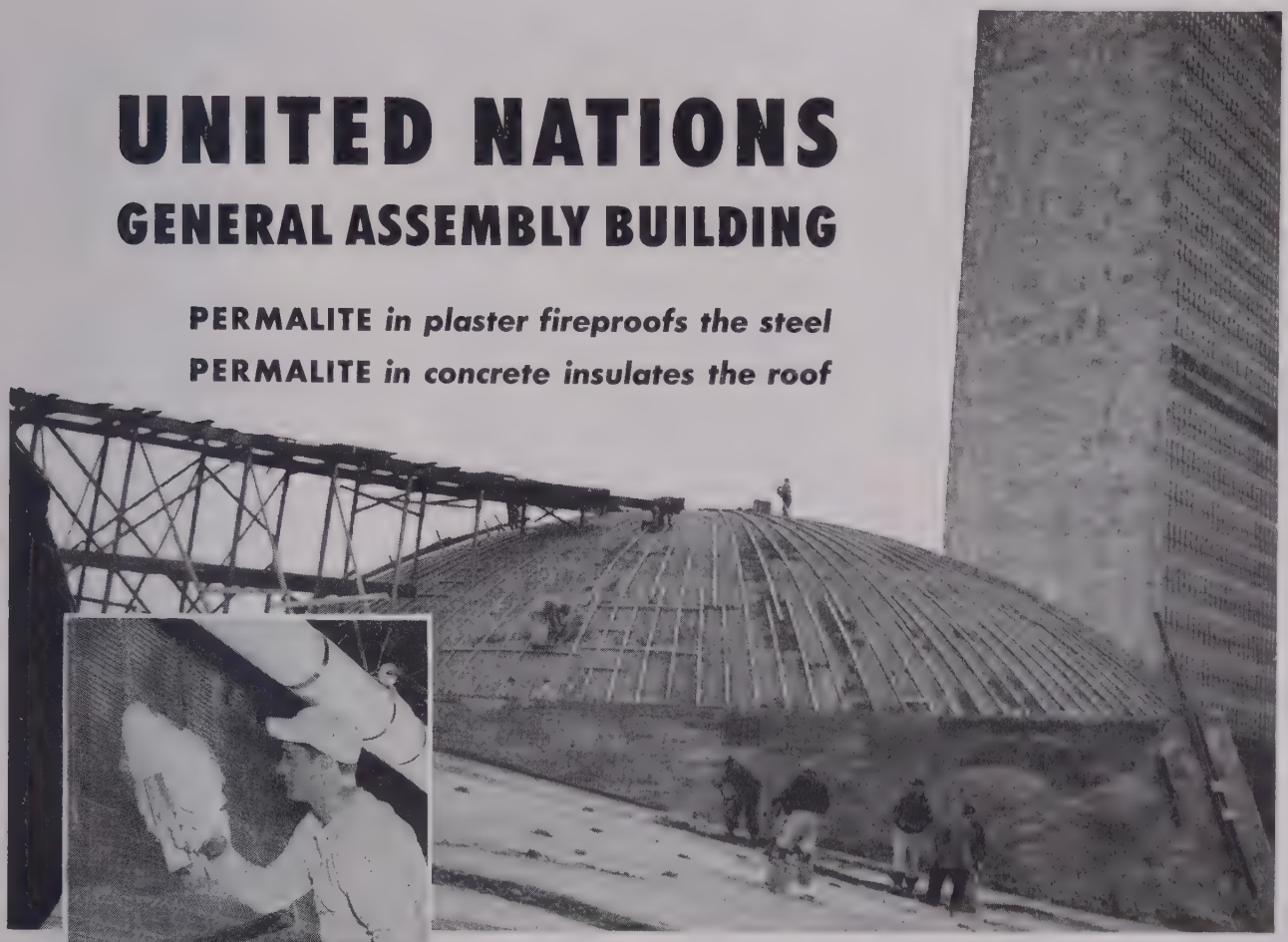
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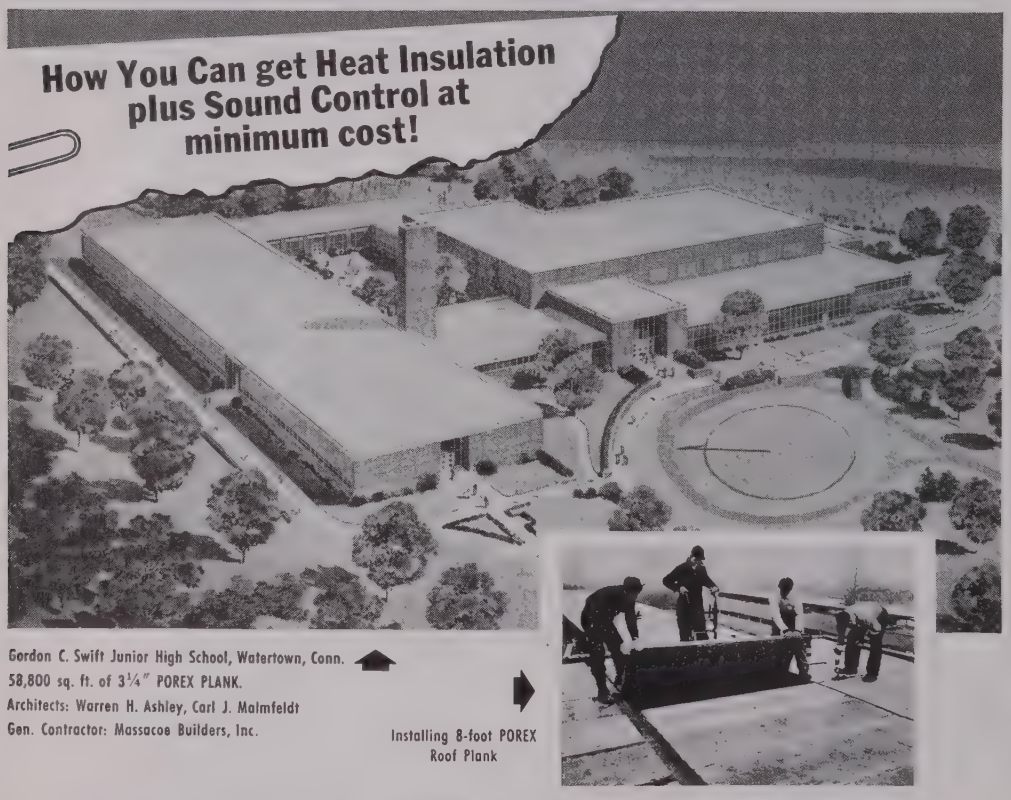
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puts lighting in its place—as an important, but only one of many equally important, considerations.

It also questions the good sense and the science behind the attempts to get uniformity of brightness, uniformity of reflectance, low contrasts. Against the quotes of the lighting experts, it pits quotes from students of the eye. "If the lighting profession ever achieved its ideal of uniform brightness, it would have something definitely unnatural and disliked. Human eyes would be troubled rather than made content." The authors reminds us that artistic blending of colors and hues is perhaps equal in importance to the more measurable light qualities of intensity and brightness, that the ability to see and understand what is being seen is probably more a matter of psychology than ability of the eye mechanism.

Aside from the blandly and good-naturedly iconoclastic chapter on vision, light and color, this is not a contentious book. It marshals a tremendous fund of observation, experience and counsel, organizes it for greatest helpfulness to anyone writing a program or anyone engaged in long-range school planning, and brings the whole thing alive with dozens of photographs of children and equipment in action.



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AN APPROACH TO URBAN PLANNING. A Series of Public Lectures Sponsored by the Bureau of Urban Research, Princeton University. Edited by Gerald Breese and Dorothy E. Whiteman. Princeton University Press, Princeton, N. J. 147 pp. (including 36-p. bibliography). 5¼" x 8". Paper bound. $2

This slim volume contains seven essays on the major elements of urban planning — public participation, zoning, redevelopment, transporation and finance, plus an introduction and a summation by the editors. Two intensely practical contributions are given on public participation by Hugh R. Pomeroy and on urban redevelopment by Charles K. Agle. The other three essays detail existing practice in each field.

In "The Planning Process and Public Participation," Hugh R. Pomeroy draws on his long experience as planning director of Los Angeles and Westchester County, N. Y., to trace the progress of planning in the US from its origins in civic motivation to become an integrated function of local government. Planning should give some guidance to tremendous private building which contributes most to the development of a city. We need to "brush aside the hokum that still clings to the idea of planning: the hokum associated with static master plans manufactured by peripatetic high priests of planning; the hokum that planning is a mysterious science and art that can be practiced only by those who have undergone some sort of special intellectual circumcision for the purpose; the hokum that planning has some ethereal quality that cannot stand being subjected to the rugged processes of democratic government." Planning is essentially a public process that calls for deeply rooted citizens' participation through public lectures, citizen organizations, and neighborhood groups, to name only a few of the 13 types of citizen participation described by Pomeroy. He particularly emphasized the need to have people educate the planners. You can always get a few individuals to express themselves on planning but it is not so easy to get any expressions from the inarticulate majority of the community who often have more at stake because there is less they can do on their own resources.

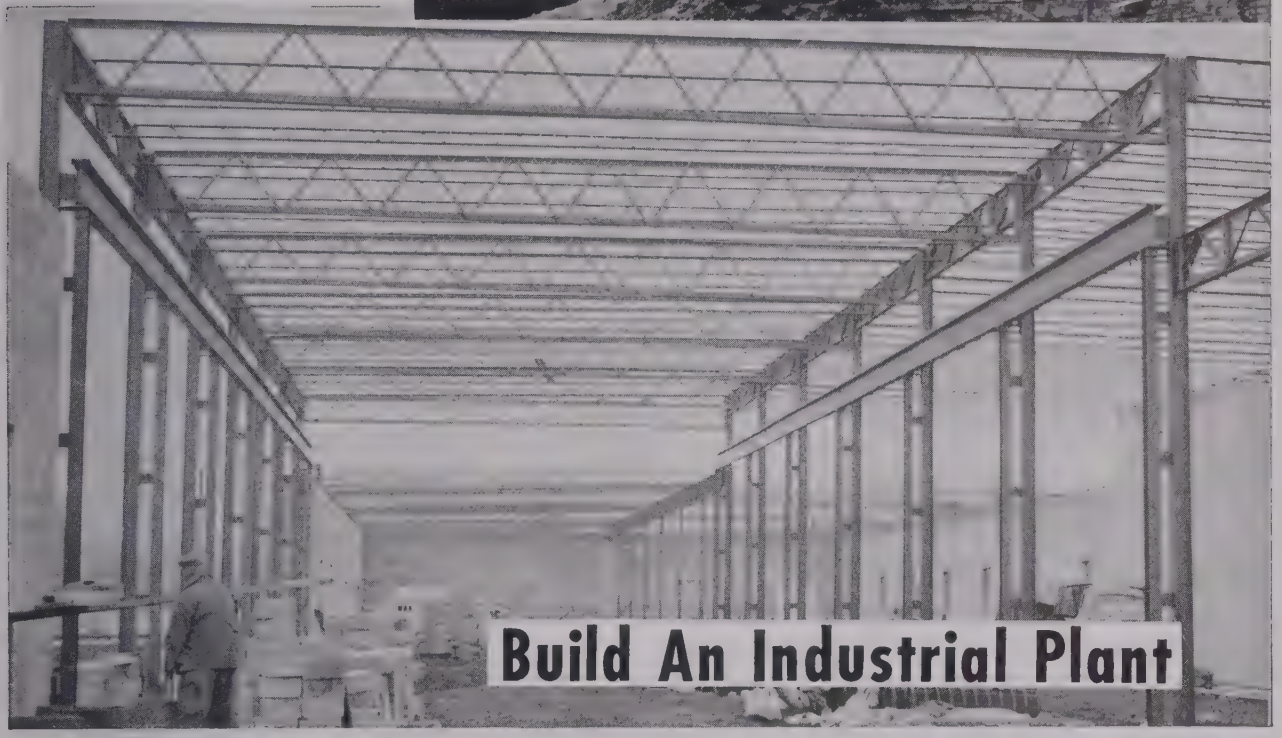
In the Title I section of the misnamed 1949

continued on p. 208

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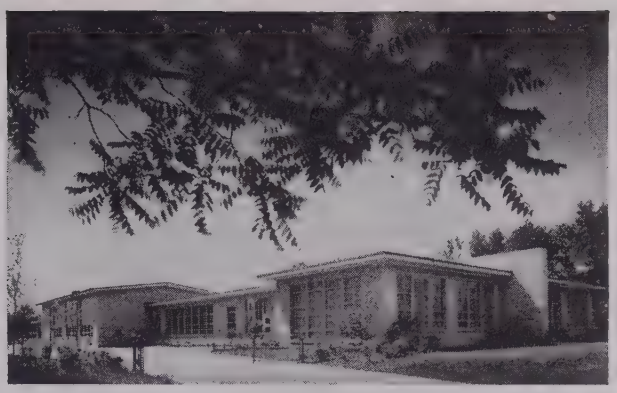
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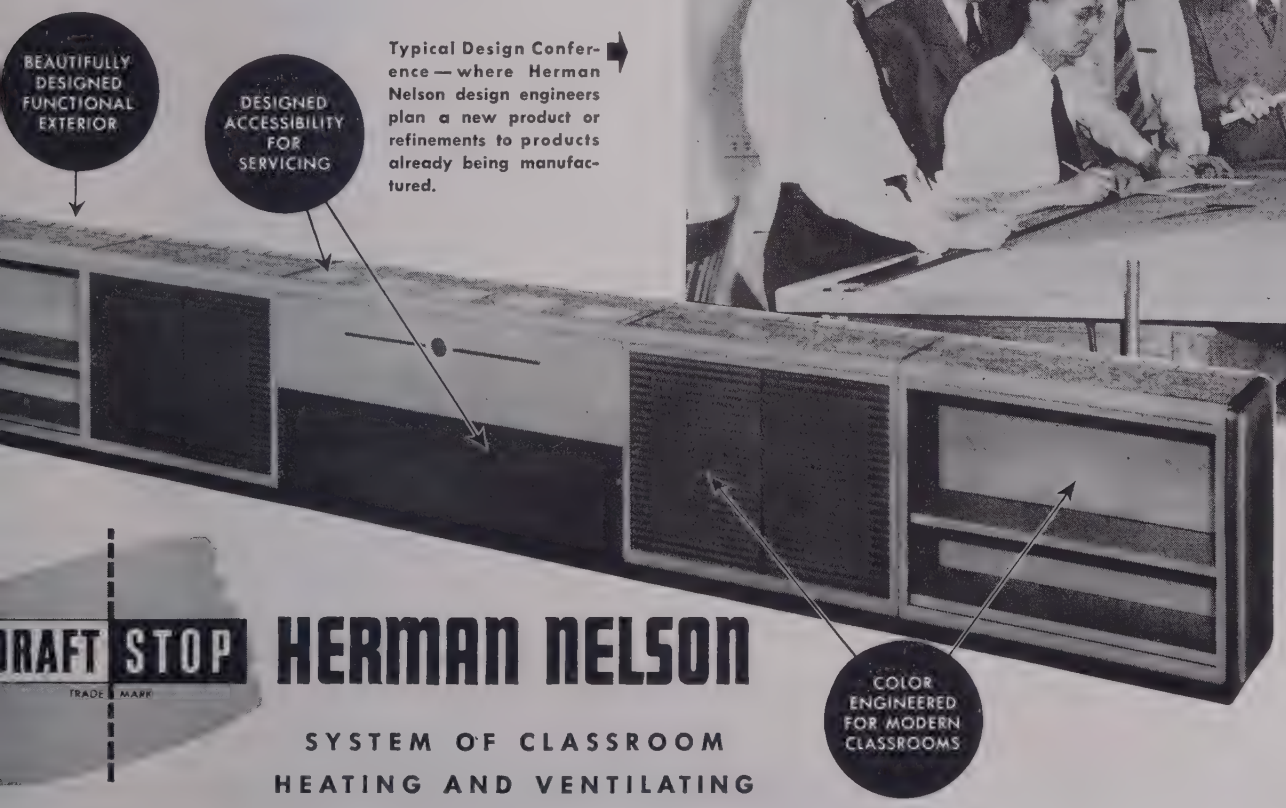
FOREST GLEN SCHOOL, GLEN ELLYN, ILLINOIS, *Superintendent of Schools,* MARK T. RIEDEL; *Architect,* CHILDS AND SMITH.



FAIRVIEW SCHOOL ADDITION, DENVER, COLORADO, *Architect,* R. EWING STIFFLER.



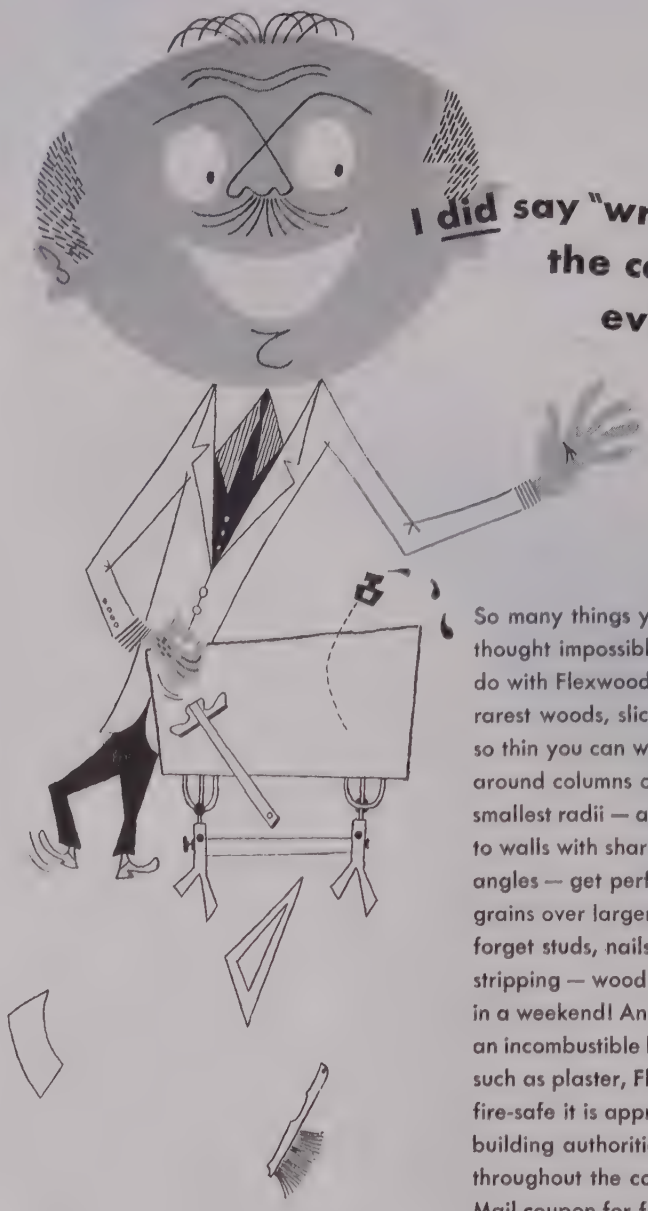
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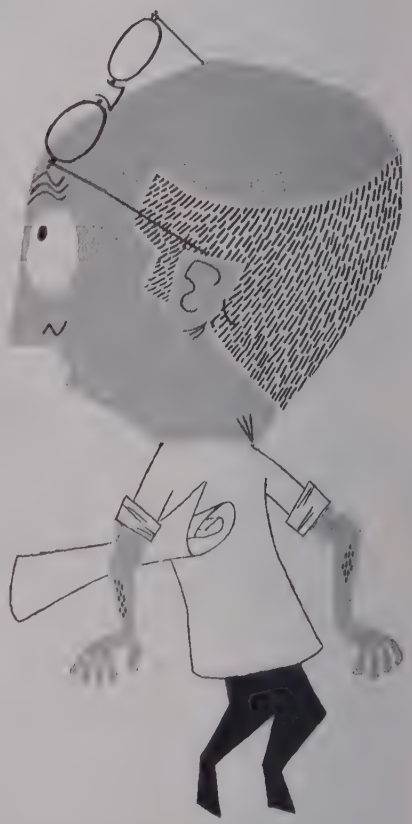
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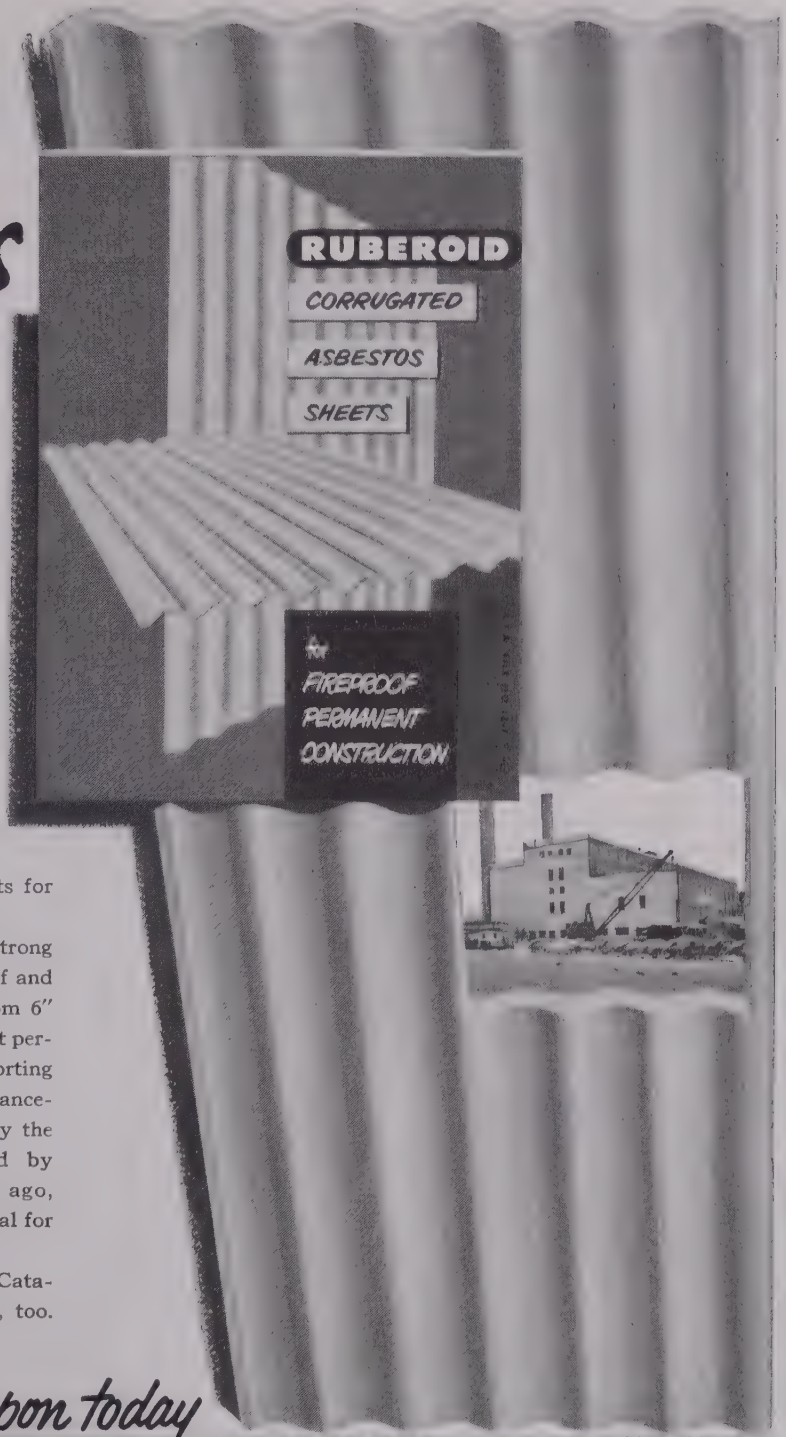
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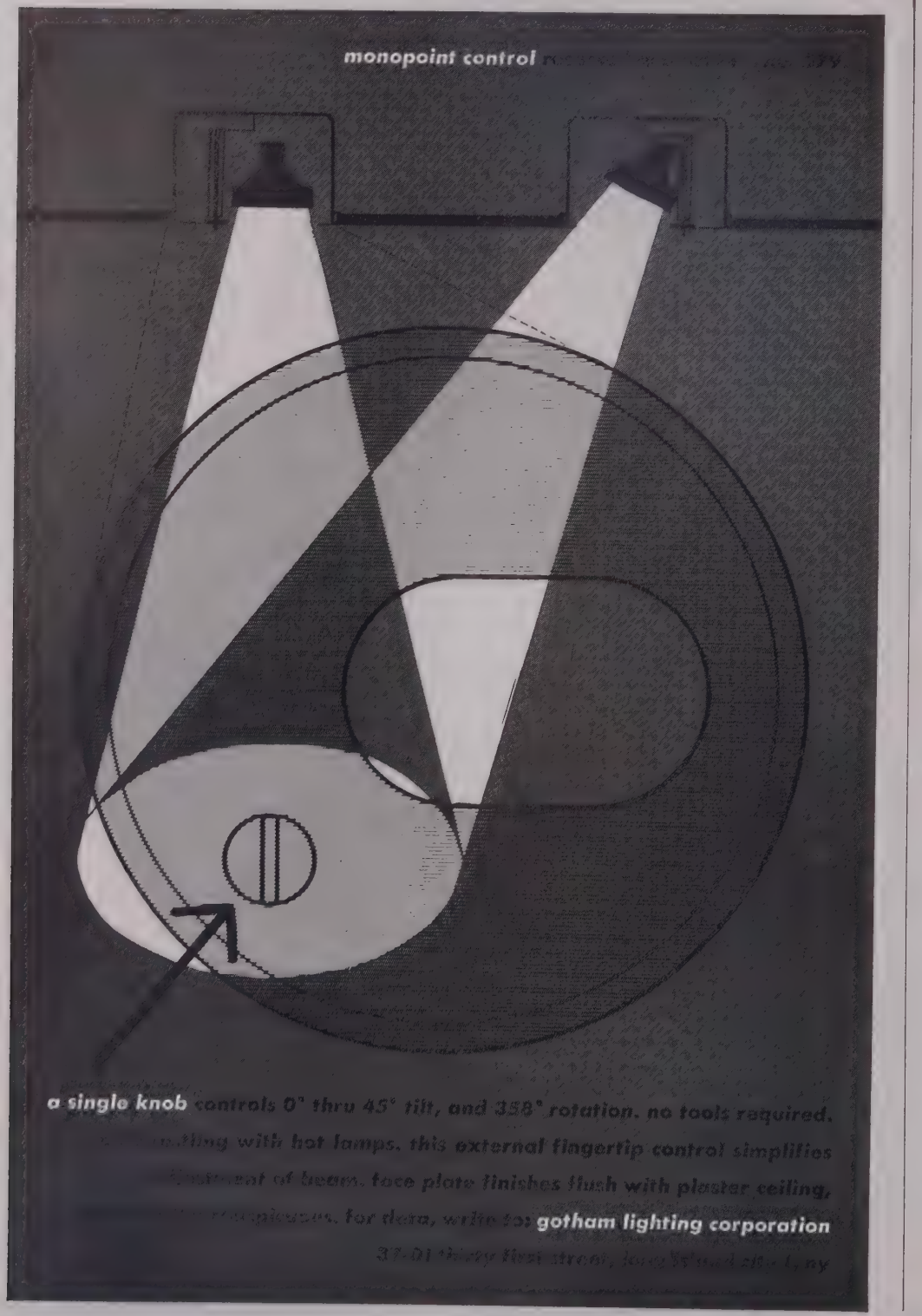
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OTHER BOOKS REVIEWED

SPECIFICATIONS. By H. Griffith Edwards. Published by D. Van Nostrand Co., Inc., 250 Fourth Ave., New York, N. Y. 311 pp. 6¼" x 9¼". $5

A primer of good specification writing for the student and young architect.

ESTIMATING CONSTRUCTION COSTS. By R. L. Peurifoy. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 18, N. Y. 315 pp. 6¼" x 9¼". $5.50

A textbook for the student of civil engineering and achitecture, and a reference work for construction engineers, this book sets forth the principles of estimating the costs of construction engineering projects and the methods for the preparation of detailed estimates.

FIXED END MOMENTS—Tables and Formulas of Members of Constant Moment of Inertia. By Paul Rogers. C. E. Frederick Ungar Publishing Co., 105 E. 24th St., New York 10, N. Y. 6¼" x 9½". 95 pp. Illus. $3.75

This book simplifies the design of continuous structures by detailing the basic mathematical formulae, the design and moment coefficients and the bending moment curves for beams of constant moment of inertia under 67 different conditions of loading and support.

WORLD'S CONTEMPORARY ARCHITECTURE, Vol. 3 (Sweden and Finland). Edited by Yuichi Ino and Shinji Koike. The Shokokusha Publishing Co., Inc., Hirakawa-cho, Chiyoda-ku, Tokyo, Japan. 104 pp. 8¼" x 12". Illus. $5

Brief outlines of the architectural trends of these two countries. The technical aspects are given under separate headings, and for the particularly interested reader there is a useful bibliography.

INDUSTRY IN TOWNS. By Gordon Logie, ARIBA. George Allen & Unwin, Ltd., Ruskin House, Museum St., W.C.2. 376 pp. 7½" x 10". Illus.

This is an exhaustive analysis of urban industry in England, with some references to Switzerland and Denmark. US factories are not discussed.

ARCHITECTURAL PRINCIPLES IN THE AGE OF HUMANISM. By Rudolf Wittkower. Distributed by Transatlantic Arts, Inc., Hollywood-by-the-Sea, Fla. 144 pp. 6" x 9". Illus. $6

The author summarizes in this book his studies on Renaissance architecture.

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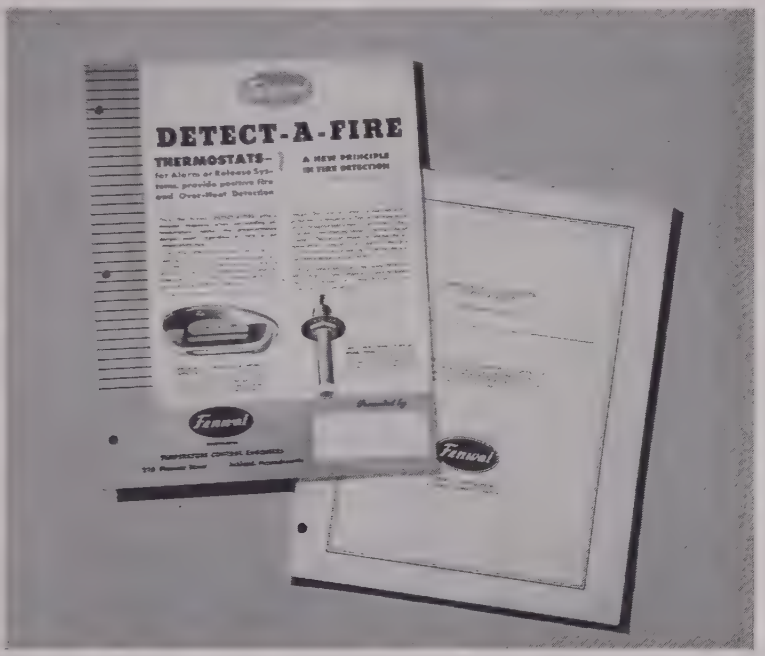
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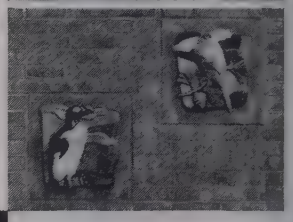
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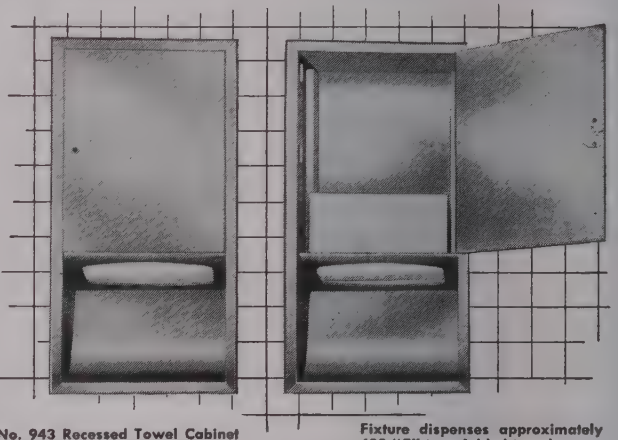






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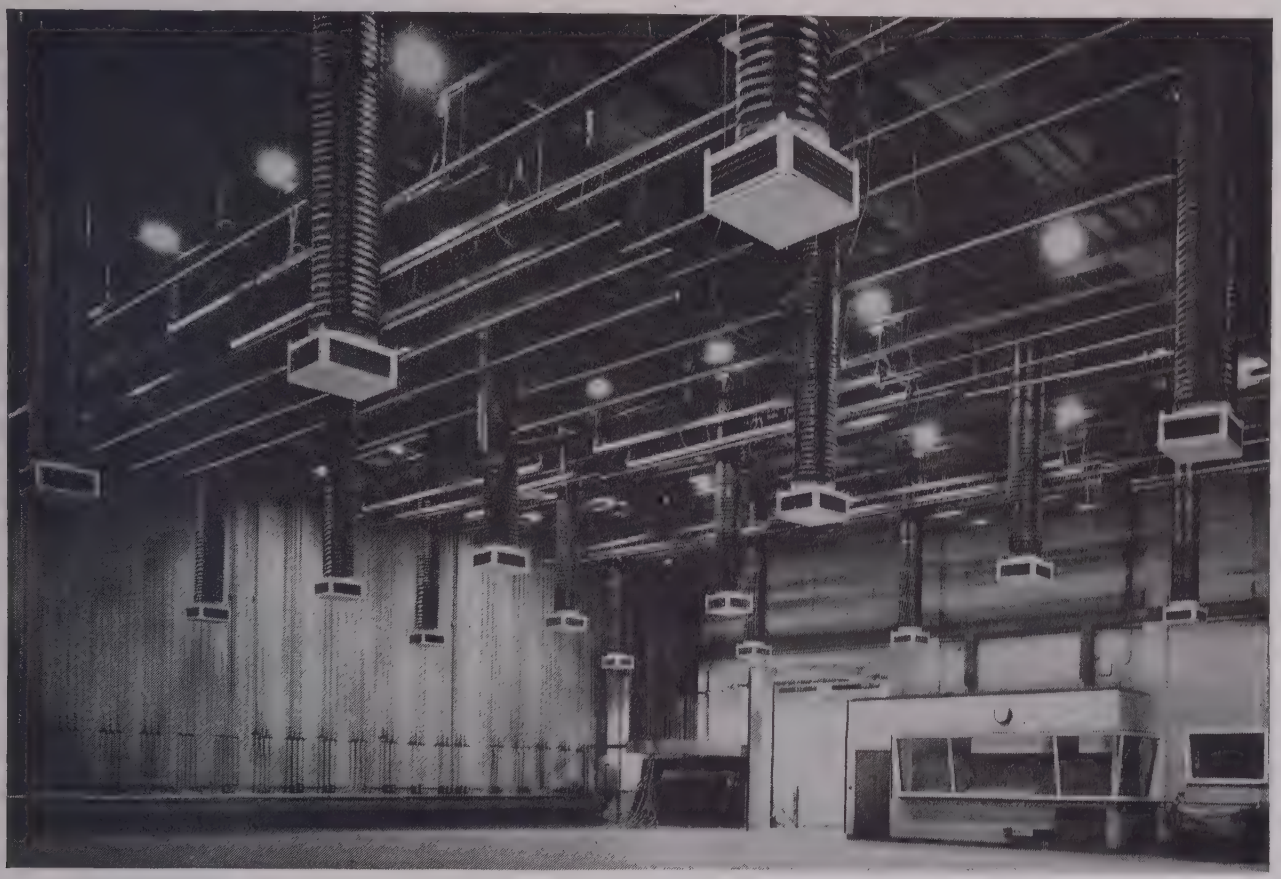
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On-the-spot air conditioning for CBS Television City



CBS-TV'S TELEVISION CITY IN HOLLYWOOD is the last word in television studios. Planning for the future, architects Pereira and Luckman created a 375,000 sq. ft. expansible structure—eventually to cover two and a half million square feet. Only the wall on the property line is permanent; in every other direction the building can expand. Air Conditioning Contractor: Kilpatrick & Co., Alhambra, Calif. General Contractor: William Simpson Construction Co., Los Angeles, Calif.

Cool air is brought right where it's needed most at CBS-TV's new Television City in Hollywood. Special air conditioning ducts, capable of being raised and lowered, and moved sideways around a 10 foot radius, are designed to spot-cool any part of this vast studio quietly and efficiently. The huge quantities of chilled water used for cooling the air are supplied by two Worthington 335-ton centrifugal refrigeration systems.

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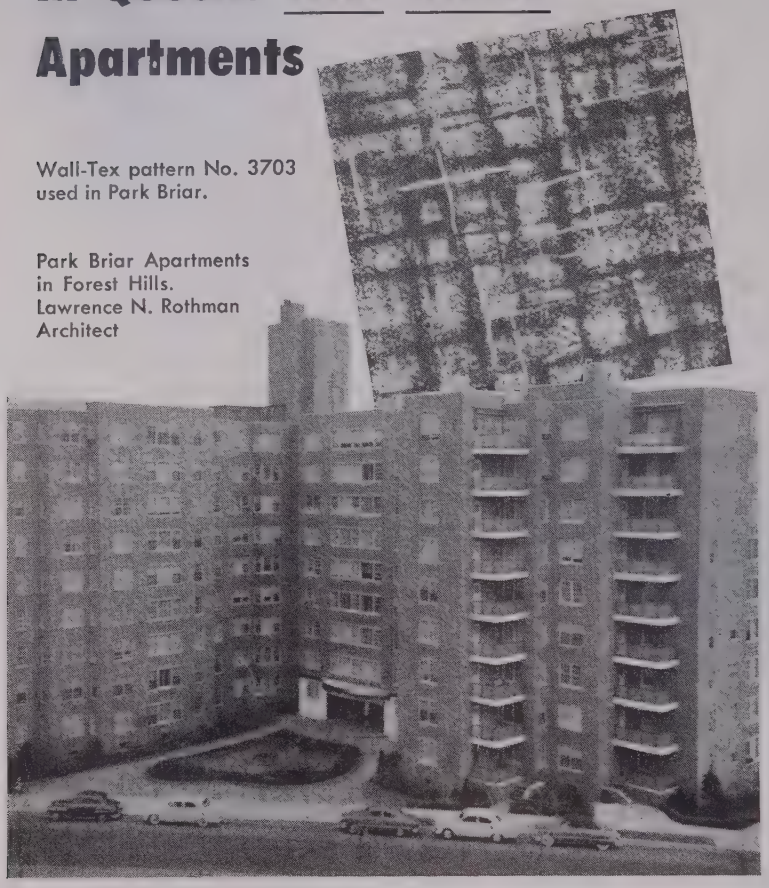
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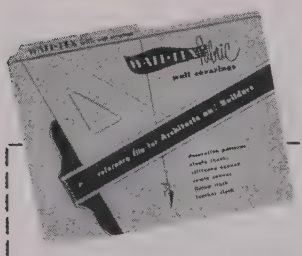
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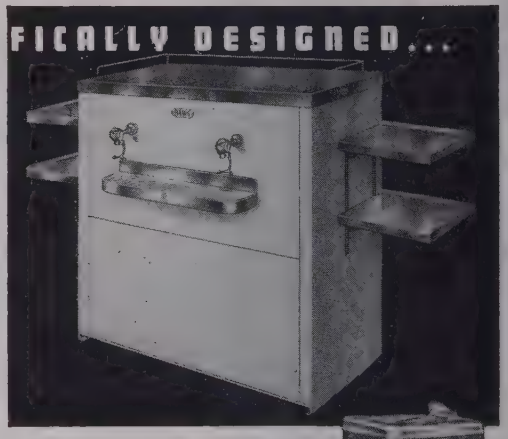
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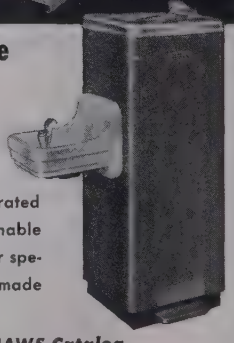
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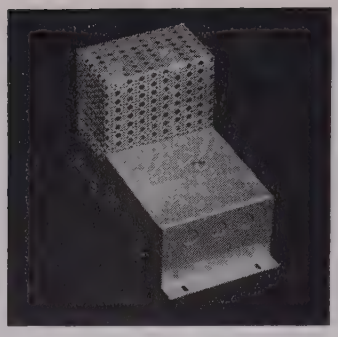
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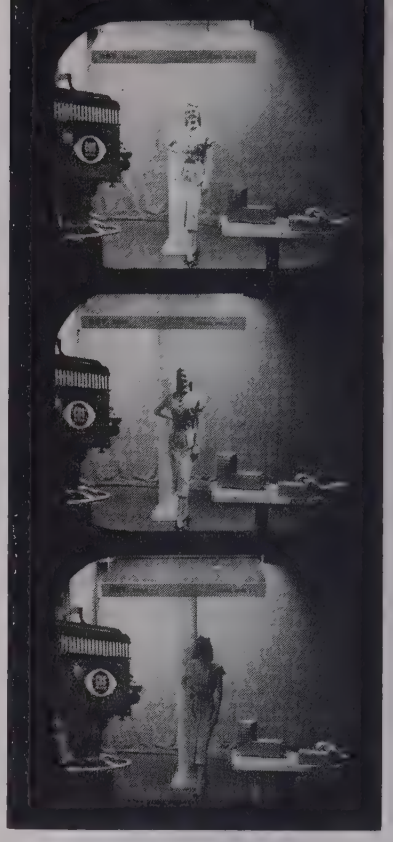
Branch Offices in the Principal Cities of United States and Central and South America

PRACTICAL DIMMING SYSTEM developed for fluorescent lighting

In the 13 years fluorescent lamps have been on the market, their economic, esthetic, and even psychic pros and cons have been measured against good old light bulbs. A giant stride in fluorescents' favor was made in '49 when white lamps were introduced that revealed as full a range of the flattering red part of the spectrum as incandescent (AF, Product News, Dec. '49). Now, the availability of a new light control and ballast greatly increases the range of uses for fluorescent lighting. Auditoriums, salons, and cafés are some of the areas where these efficient lamps can now be more fully utilized.



The little ballast box packs a wallop for fluorescents. Right, new dimming in TV studio.

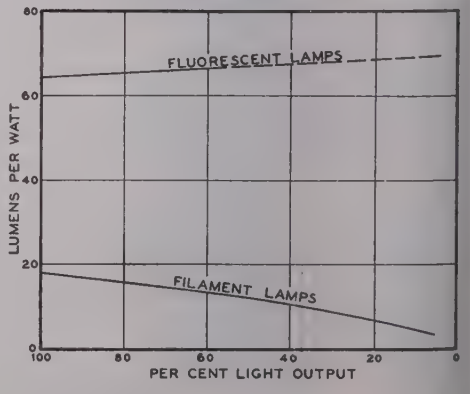


In addition to lower operating costs, fluorescent dimming has a distinct visual advantage over incandescent systems: white fluorescents change very little in tone over the entire brightness range, whereas filament lamps blush red as they darken (see chart below). G.E. engineers John H. Campbell and Harry E. Shultz, designers of the new system, also report that colored fluorescents, although up to 25 times as efficient as incandescent lamps, have been limited in their use because, until now, their brightness could not be regulated.

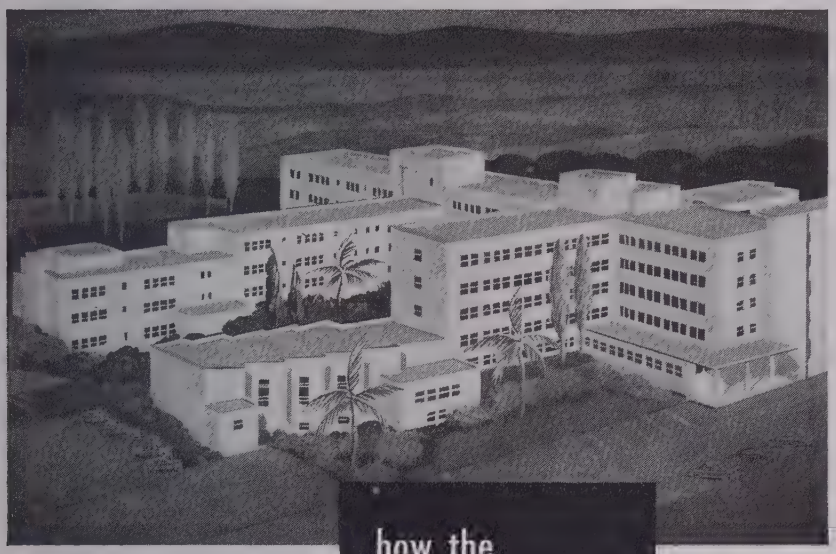
The new dimming system requires a 236 v supply to the electronic control. Three wires are run to the entire lamp load and special single-lamp ballasts. The brightness selector, a simple knob device, can be placed wherever convenient. The dimmer operates not by varying lamp voltage but by controlling the time during which juice is applied. Light output varies according to the interval that current flows through the lamp during each

continued on p. 220

WHITE LIGHT EFFICIENCY OVER DIMMING RANGE







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There is a York Engineering Office near you. The number is in your Classified Telephone Directory. A consultation with a York Engineer incurs no obligation, of course. It can lead to important savings in time, money and worry for you, as it has for so many others. Or write to York Corporation, York, Pennsylvania.

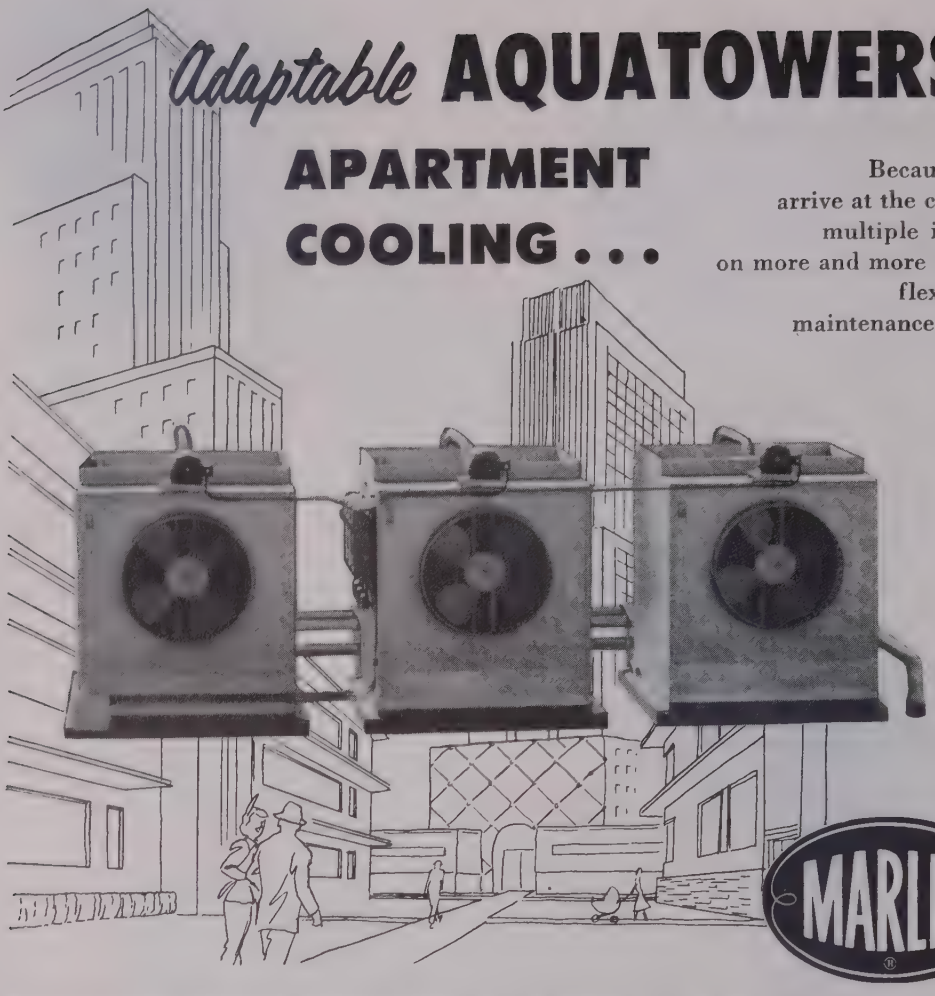
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In every major trading center there is a York Engineering Office with men skilled in the arts of engineering, contracting, construction and service. They are constantly backed by continual factory research and product development in one field exclusively—air handling and mechanical cooling! They are at your service always!

YORK AIR CONDITIONING AND REFRIGERATION
HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

Adaptable AQUATOWERS* *are the ideal units for.*

APARTMENT COOLING . . .



Because they offer the simplest and cheapest way to arrive at the cooling capacities required by apartment buildings, multiple installations of Marley Aquatowers are appearing on more and more new structures. This system of cooling offers true flexibility of operation; no complete shutdowns for maintenance; varying schedules of operation with consequent power and water economy.

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Aquatowers conform to building codes and are available in a wide range of sizes and models for services requiring 2 to 60 tons of refrigeration. For reliable assistance in proper tower selection or prompt delivery from local Aquatower stocks, get in touch with your nearest Marley Engineering Sales Office.

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The Marley Company

Kansas City, Missouri



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Draw-Matic is the solution to the operation of draperies for larger openings . . . Draw-Matic operates smoothly and efficiently without effort . . . a completely concealed unit, opens and closes draperies of pre-set positions. Can be operated by remote control. Ideal for residential, commercial, industrial and institutional installations.

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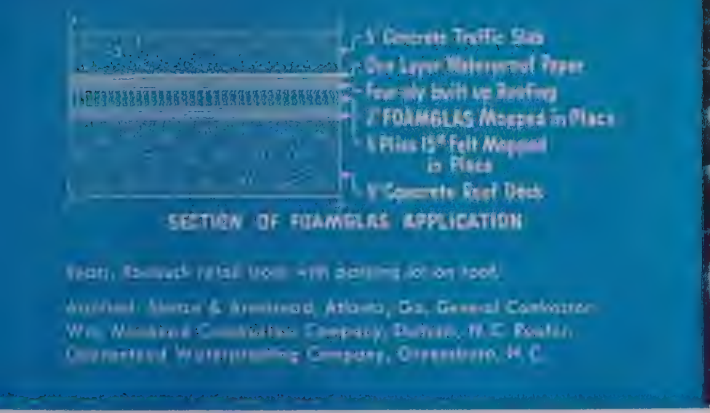
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SECTION OF FOAMGLAS APPLICATION

Sears, Roebuck retail store with parking lot on roof.

Architect: Abreu & Armistead, Atlanta, Ga. General Contractor: Wm. Woodward Construction Company, Durham, N. C. Roofer: Commercial Waterproofing Company, Greensboro, N. C.



By putting the parking lot on the roof Sears, Roebuck and Co. cut land needed in half, but it took FOAMGLAS insulation to make it practical for their new Winston-Salem store. Other insulations lack compressive strength enough to withstand such a load, while each 2" x 12" x 18" block of FOAMGLAS used theoretically could support the weight of nine Sears' customers' cars.

During the past four years, their FOAMGLAS roof has meant lower air conditioning costs for Sears because FOAMGLAS sealed glass cells are impervious to the moisture that impairs so much the effectiveness of other insulations. Sears sure got *a lot* more with FOAMGLAS!

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Pittsburgh Corning Corporation, Dept. D-43
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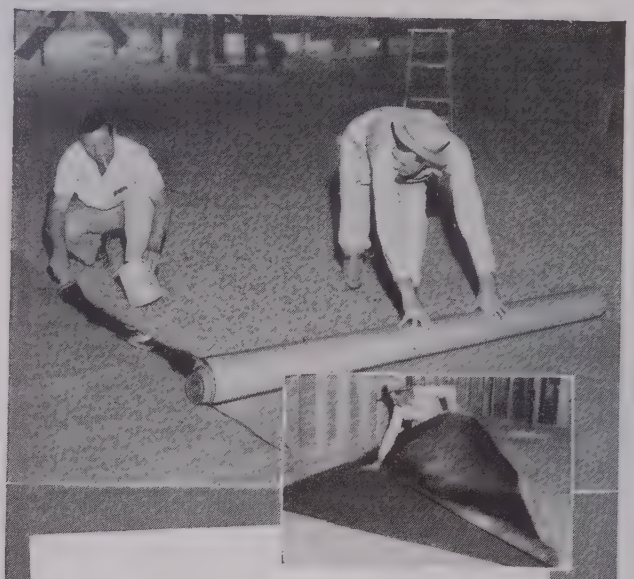
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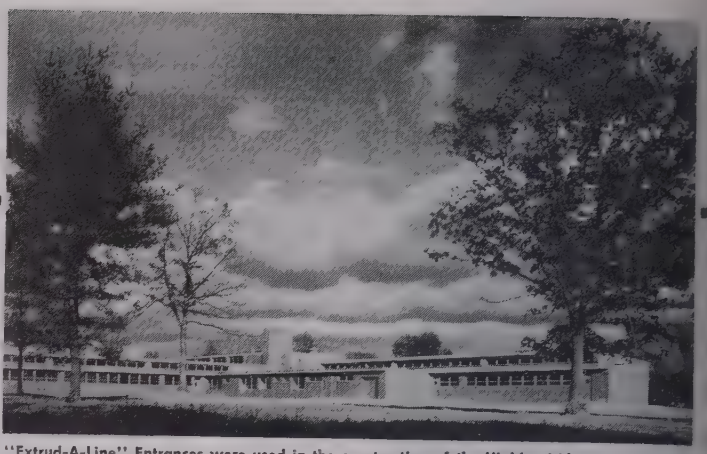
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Dept. A4-7, 33 West Grand Avenue, Chicago 10, Illinois

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cycle. A control unit for dimming one to eight lamps cost $150; a unit for one to 35 lamps is $200. Ballasts are $4 each.

Manufacturer: General Electric, Nela Park, Cleveland 12, Ohio.

LIGHTWEIGHT CELLULAR SUBFLOOR nests flexible electrical system

A structural unit, multipurpose subfloor, and electrical distribution medium, Fenestra-Nepco load-rated *Electrifloor* is more than a new product; it is the fruition of thinking teamwork within the construction industry. Detroit Steel Products and National Electric Products, working under the uncle eye of the American Iron and Steel Institute, combined building know-how to develop this cellular, light-gauge steel, electrified floor. Officials of the National Building Code and sundry city codes, and Underwriters' Laboratories put it through their own particular wringers and it came out clean:

After subjecting the prefab panels to the abuse they might get during shipping, installation, and use, Underwriters approved *Electrifloor* and cited its enclosed cells as smooth, large raceways for electrification.

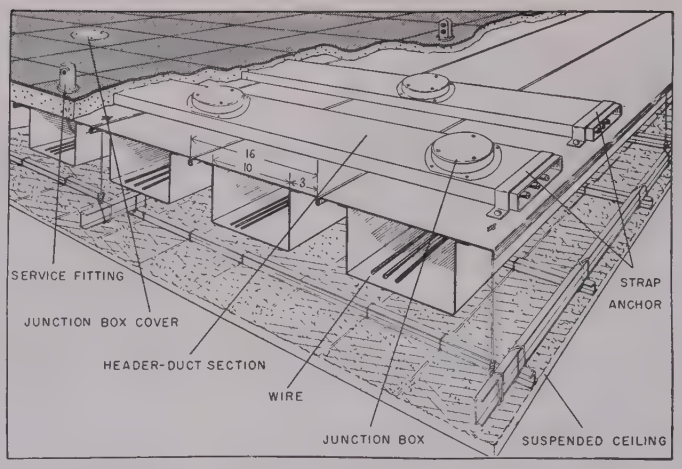
Testing the subfloor for load-bearing capacity, fire resistance and ability to take laterally and literally hell-on-earth—earthquakes, floods, gales and concussions—code guardians certified it.

Thus officially approved, *Electrifloor* should soon earn the unofficial plaudits of men on the job and in the design rooms. Installation is clean. Each section can be carried and laid by two men. Quickly erected to form a flat deck, the panels immediately serve as a safe walkable platform for construction crews and materiel. Providing almost unlimited power service via header ducts with conductors running through each cell section, the new subfloor can adapt itself to immediate and future requirements of an office, a hospital, a TV studio. Any spot on the entire area can be tapped. The duct's large cross section — 30 sq. in. — permits an electrical capacity which can meet the most complex power and communication needs.

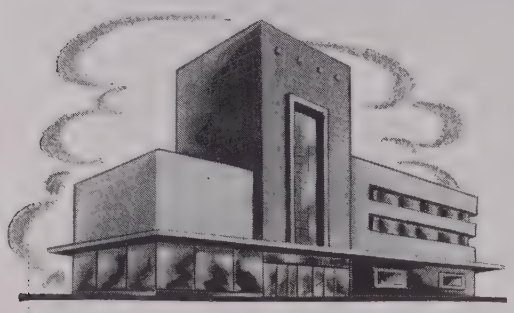
The strength-to-weight ratio of the sections and header ducts are precisely engineered for maximum efficiency at minimum weight. A shallow concrete pour tops the unbroken surface; no metal lath or joists are necessary. Creating less dead weight, *Electrifloor* needs less steel to hold it up than other panel-type subfloors, and so contributes to the over-all economy of the structure. Cost of *Electrifloor* fully installed runs from about $1 to $1.30 per sq. ft.

Manufacturers: Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11, Mich. National Electric Products Corp., Pittsburgh.

continued on p. 226



Every cell in the structural subfloor is a potential wire raceway. Electrical equipment involved in any interior arrangement, or rearrangement, is easily accommodated.



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Nature is relentless!

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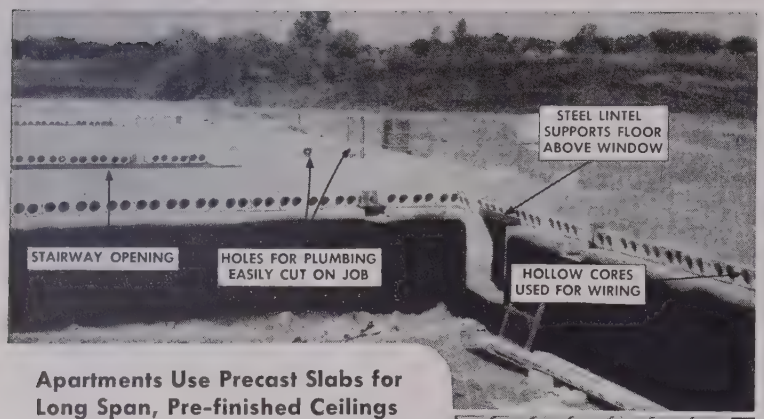
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Flexicore floor and roof slabs clear-spanned rooms up to 21′ 6″ and eliminated ceiling plaster on this 556-unit Minnesota project. Smooth underside of ceiling slabs was painted. Flexicore's fast, low-cost erection cut total job time 20%. Precast slab design simplified openings. For catalog and nearest manufacturer, write The Flexicore Co., Inc., 1763 E. Monument Avenue, Dayton 1, Ohio.



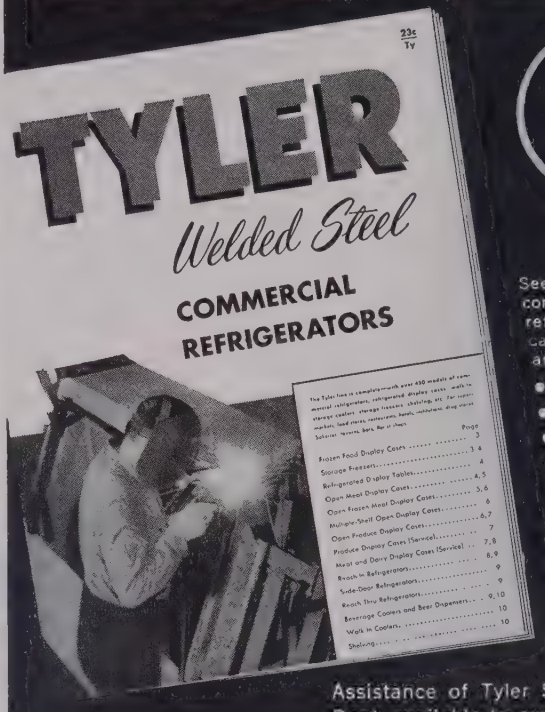
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See catalog of the complete Tyler line of refrigerators, display cases, storage freezers and coolers for:

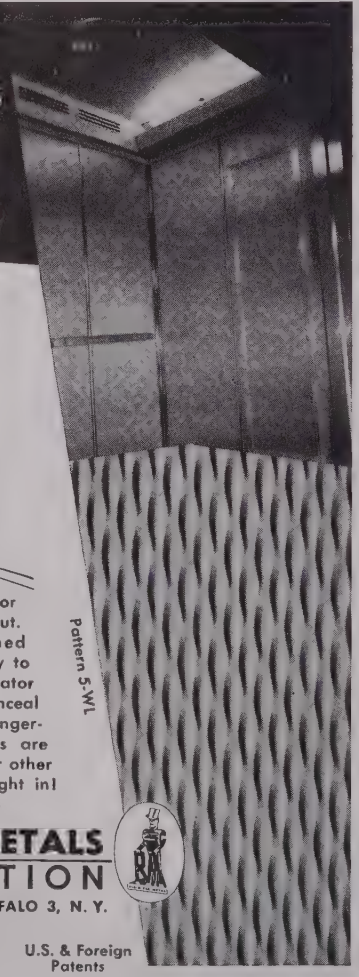
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architectural forum

540 N. Michigan Avenue
CHICAGO 11, Illinois

AIR CONDITIONING THE EXISTING BUILDING:

This 13-story project proves it can be done quickly and economically with self-contained Frigidaire units

LOCATION: Nashville, Tenn.

GENERAL SHOE BUILDING CORP., Owner

Here's a problem that's bound to arise more and more as older buildings begin to feel the competition of postwar, air conditioned structures.

Simply stated, the problem is this: (1) To air condition a multi-story building in which no previous provision for air conditioning has been made. (2) To do it while business goes on as usual in the building. (3) To do it at a cost that's in line with reasonable rental charges.

An ideal solution suggested by Frigidaire for this 13-story Nashville office building is a multi-unit system—using several self-contained Frigidaire air conditioners on each floor.

Besides providing a fast and economical answer, this Frigidaire plan has many other advantages. Since the Frigidaire units are individually installed and need little duct work, there is no costly interruption of business during installation. For the same reasons—if necessary—installation can easily be put on a floor-by-floor, "pay-as-you-go" basis.

But even more important than the installing is the end result—a system where the danger of total or even serious breakdown is held to an absolute minimum; a system that's "zoned" by the individual controls on each unit; a system that can quickly be modified to meet changing conditions.

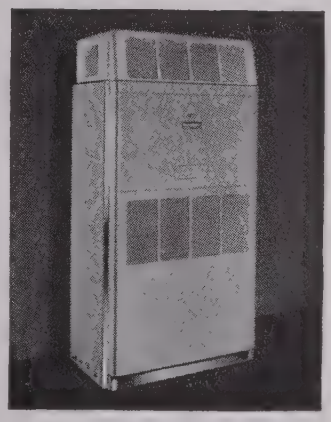
For expert help with such a system—or with any air conditioning or refrigeration problem—call the Frigidaire Dealer, Distributor or Factory Branch that serves your area. Look for the name in the Yellow Pages of your phone book. See Frigidaire catalogs in Sweets Files, or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Toronto 13, Ont.



A total of 39 self-contained Frigidaire units air condition this 13-story office building from top to bottom. Water for the units is circulated through two cooling towers on the 12th story roof. Central "on-off" controls are located in the basement.



Three 5-ton units like the one in this anteroom are used to condition the 12th floor. Cooled air from the units is distributed to individual executive offices through insulated ducts placed in an attic space directly above the ceiling.



Now available in 3, 5 and 7½-ton sizes, these Frigidaire self-contained air conditioners can actually be employed to handle almost any air conditioning need. With the addition of optional heating coils, they provide year 'round service.

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3⅛", 3⅝" and 4"
16 and 14 gauge



DOUBLE STUD
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16 and 14 gauge



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6" and 8"
16 and 14 gauge



DOUBLE JOIST
6" and 8"
16 and 14 gauge

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Penmetal *Lightsteel* Sections are cold-rolled from structural grade steel on high speed machines. So, cost is low. *Lightsteel* Sections come in a full range of widths, convenient precut lengths, particularly suited to the requirements of modern design

... framing is easy; requires no cranes, no extra equipment, no special skills

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... high strength to weight ratio means quicker erection, takes fewer man-hours

... combinations of standard *Lightsteel* studs and joists with *Lightsteel* track and bridging make for quick and easy framing of all openings, including doors and windows.

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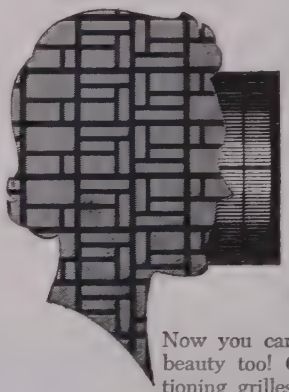
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Bulator is available in a wide range of designs and styles to best conform to your decorative motif. For further information write to Hendrick.

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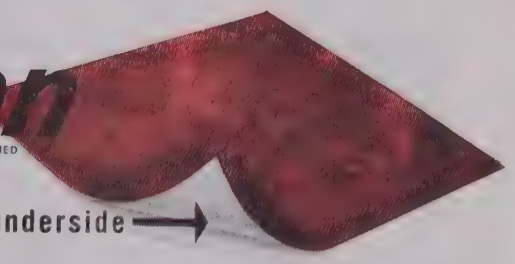
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Astounding but true, Kalistron-covered walls, even after years of abuse, don't show ugly bruises or scrapes. Records at leading hospitals, hotels, schools, other heavy-traffic buildings prove it. Miraculous? Here's the secret: Kalistron is different, it's made by fusing color to the *under*side of clear, super-tough plastic sheeting. No surface wear can get at that *under*side color.

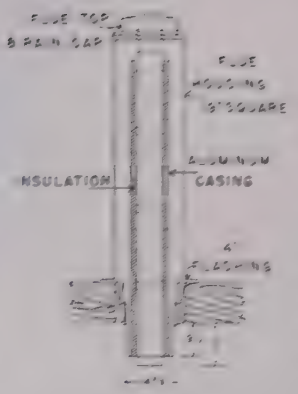
Also, that *under*side feature means wonderfully rich color-depth. As a result, Kalistron walls are more beautiful to start with. And that beauty lasts! You get big savings in wall maintenance costs.

Exceptional also for upholstery, *with 3-way-stretch fabric-backing.* Available in special colors for harmonizing of walls, furniture and decorations.

Write for detailed information.

Address: United States Plywood Corporation, Dept. F-34
55 West 44th Street, New York 36, N. Y.





PREFAB CHIMNEY designed for flat tops

The factory-engineered *Vitroliner* is an economical and convenient chimney for flat-roofed, one-story structures. Supported by straps nailed to ceiling joists (16″ o.c.), the packaged unit can be installed by one man in less than an hour in any part of the building. The chimney's steel pipe core, made with bell and spigot joints, has a coating of acid-resistant vitreous enamel inside and out. Insulation, 1″ thick, and a metal casing are said to insure high stack temperatures and good draft as well as to protect nearby wood members from any dangerous heat. The *Vitroliner* is listed by Underwriters' for use with coal, oil, or gas heating units, and is adaptable to suspension-type or stand-up furnaces. The flue comes in diameter sizes of 6″, 7″, 8″ and 10″. Its 19″ square sheet-metal housing extends from 3′ to 6′ above the roof line. The chimney sells for $50 to $75, according to size required.

Manufacturer: Condensation Engineering Corp., 3511 W. Potomac Ave., Chicago, Ill.

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Marlo AIR CONDITIONING

Helps Keep Good Food BETTER

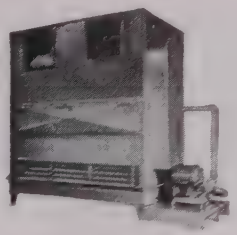
in the massive new WRIGLEY warehouse

Architect: Louis G. Redstone
Engineers: C. L. Toander & Associates
General Contractor: Campbell Construction Co.
Mechanical Contractor: Mally Corp.

When the gigantic new Wrigley's Stores, Inc., warehouse in Detroit was planned, Marlo equipment was chosen to protect the huge stocks of food which would be stored in this 7,000,000-cubic-foot structure —one of the largest of its kind in the country.

Marlo equipment was the logical choice, with its reputation for efficient, economical operation. Marlo Floor and Ceiling Units and a Marlo Evaporative Condenser are now on guard at all times, helping to maintain the quality that has made Wrigley one of the nation's most popular food chains.

Marlo meets *all* air conditioning needs—better! Next time you have an air conditioning problem, specify Marlo for the *right* answer.



Marlo Evaporative Condensers and Cooling Towers mean quiet, economical cooling, with savings of up to 95% of normal water demands.



Compact, efficient Marlo Floor and Ceiling Units serve any area with complete summer-winter functions.

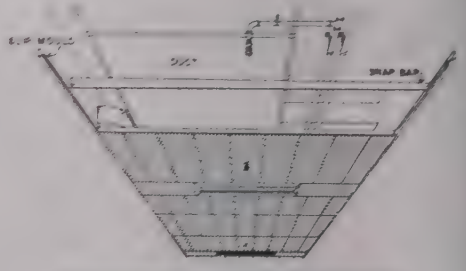
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Manufacturers of COOLING TOWERS • EVAPORATIVE CONDENSERS • INDUSTRIAL COOLERS • AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS

Saint Louis 10, Missouri

WALL HUNG PANEL CEILING designed for corridor installations

Simplex aluminum ceiling is a clean and functional mask for the service lines and gadgets often concentrated in building corridors. Fastened to the walls, the slotted channel supporting the 1′ x 4′ flush panels will span halls up to 8′ wide. The ceiling weighs less than ¾ lb. per sq. ft., and requires no intermediary supports. Any one of the flush pans can be removed with a screw driver without disrupting the others. Thus, each serves as an access door to wiring, ductwork, piping, etc. overhead. Small pull knobs can





be attached to panels that are taken out often; i.e. those under valves. Where perforated pans are used with sound absorbing pads of mineral wool or glass fiber, the ceiling can provide noise reduction coefficient of .65, .75, or .85. *Simplex Wall Hung* costs from 95¢ to $1.15 per sq. ft., in place.

Manufacturer: Simplex Ceiling Corp., 552 W. 52 St., New York 19, N. Y.

Technical Publications p. 230

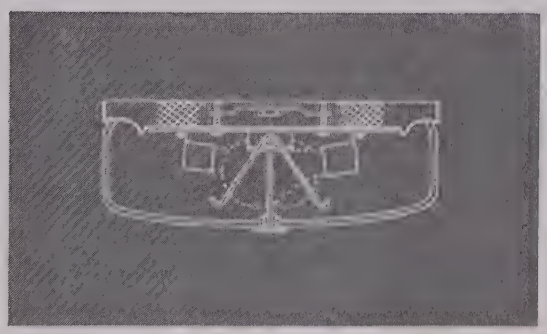
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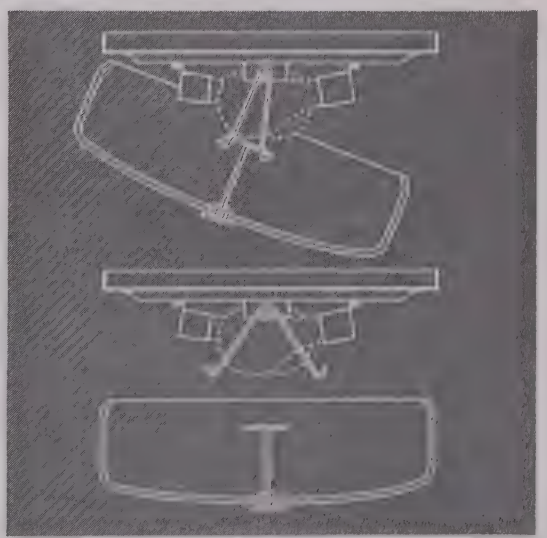


trim, slender lines... simplified maintenance

Trim slender lines and pure white Opalite bowl of this general utility fixture help maintain the character of today's crisp architecture. Complementing curves at edges of narrow satin chrome ceiling pan and bowl minimize dust seepage, create a clean vertical line. Careful engineering assures maximum light output, fully diffused. In four standard sizes with matching wall brackets. All are fully approved by Underwriters Laboratories.

Write for complete architectural portfolio to Lightolier, Dept. AF-4, Jersey City 5, N. J.





For easy maintenance, fingertip pull on any side drops bowl to safe position, held by the Tortiontite spring. Can be removed entirely by compressing spring.*

*Pat. applied for.

lighting by LIGHTOLIER

Jersey City 5, New Jersey

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ARCHITECTURAL FILE 15h Ra

INDUSTRIAL CONSTRUCTION FILE 7a Ra

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Winchester, Ky.: Thoroughbred Motor Courts, which have received nation-wide attention, benefited from the design magic of Raymond Loewy. Included in the many unusual features are these built-in Formica desk-vanity units. Scratch resistant Formica is unharmed by inks or ordinary cosmetics.

McCommish Floors, Formica Fabricator

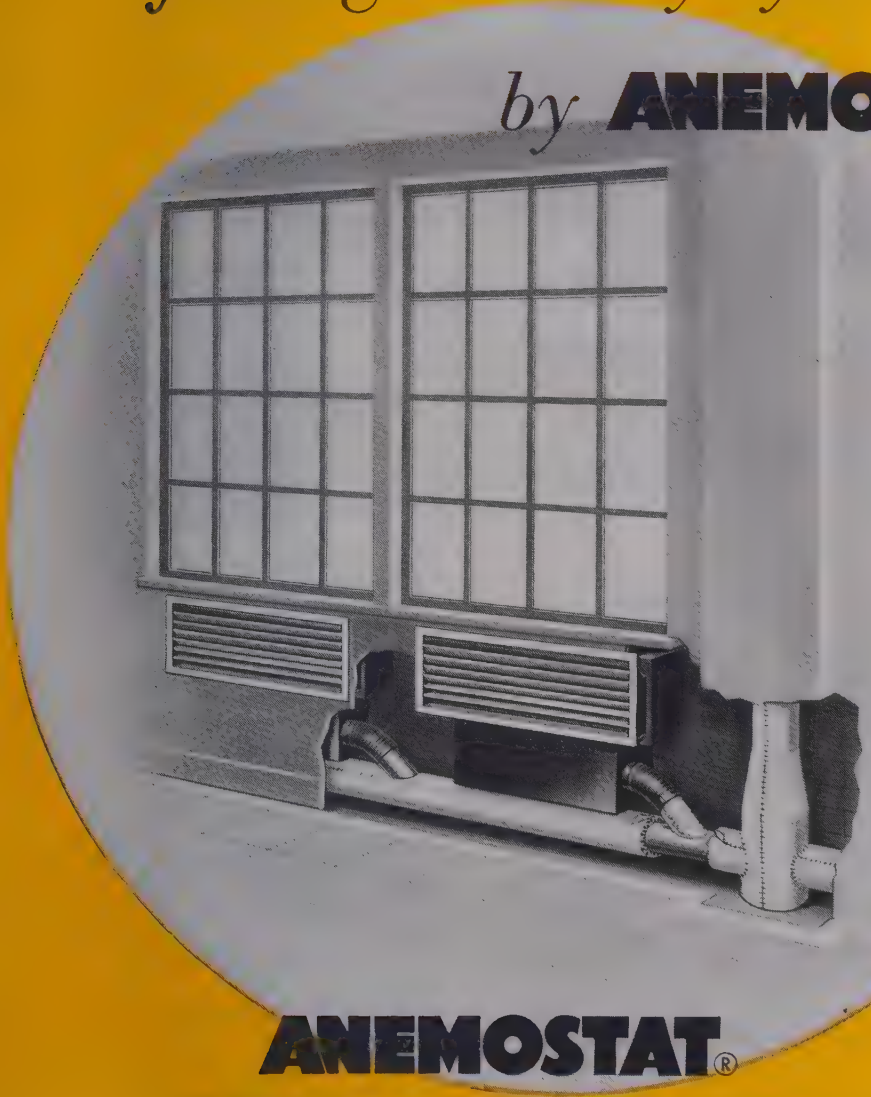
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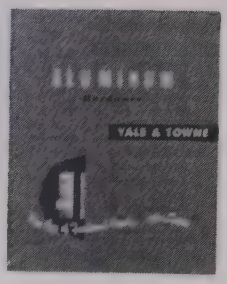
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HARDWARE. Yale Aluminum Hardware. Yale Lock and Hardware Div., Advertising Dept., The Yale & Towne Mfg. Co., Stamford, Conn. 8½" x 11"

Pictured in the brochure is Yale's new line of anodized aluminum hardware for schools, hospitals, and other institutional and commercial applications. The line includes locksets, auxiliary mortise locks, door pulls, stops, and holders, sash fasteners, and pushplates.



when you need to be SURE

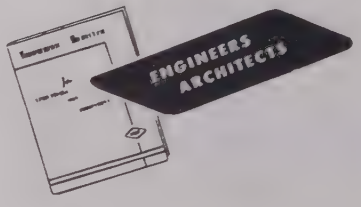
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PROTECTIVE COATING. Monsanto Products for Paint Preservation, Bulletin 11652 H. Monsanto Chemical Co., Organic Chemicals Division, St. Louis 4, Mo. 4 pp. 8½" x 11"

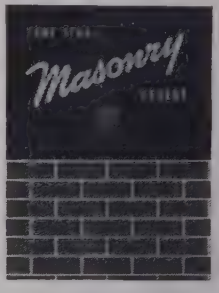
Chemicals for protecting many kinds of exterior paint and painted surfaces against mildew and mold are reviewed in this bulletin. Ways and means are suggested for utilizing Monsanto compounds to preserve water-base paints, latex and other emulsion paints, and oil paints.

PARTITIONS. Hauserman Movable Interiors, Data Manual 53. E. F. Hauserman Co., 6800 Grant Ave., Cleveland 5, Ohio. 92 pp. 8½" x 11"

Illustrated with detail drawings and photographs, the manual presents concise text on eight different types of movable partitions, wainscot, and railing for nonresidential construction. It includes data on Hausermans' steel pan ceiling, and standard accessories for the partition systems.

MORTAR. Lone Star Masonry Cement. Lone Star Cement Corp., 100 Park Ave., New York 17, N. Y. 16 pp. 8½" x 11"

Following an outline of advantages for the company's masonry cement, such as uniformity, low absorption, and high water repellency, the booklet goes on to explain in easy-to-read graphs the effects of mix proportions, and mixing time on water retention, strength and absorption.



PRESTRESSED CONCRETE. Aeroflex Plastic Tubing for Prestressed Concrete. Anchor Plastics Co., Inc., 36-36 36th St., Long Island City 6, N. Y. 4 pp. 8½" x 11"

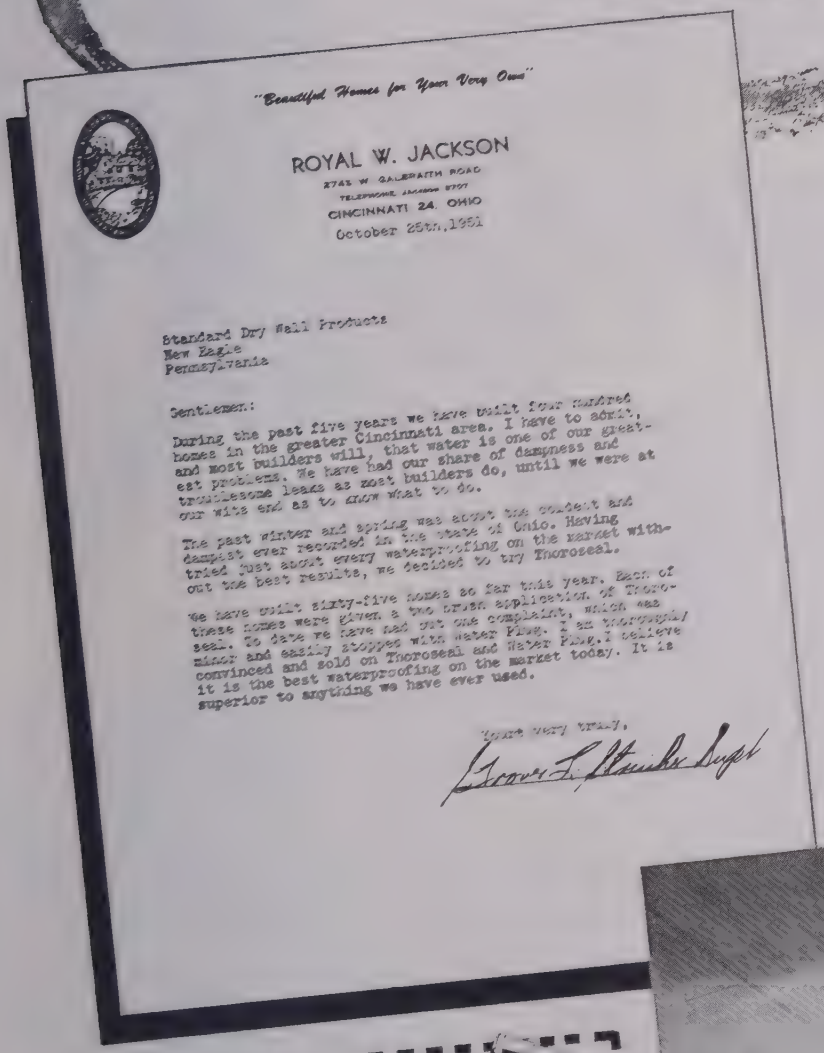
Showing how to apply a bond-preventing plastic tubing over wire rope and rods in post-tensioned concrete beams, the folder gives complete technical data on the tubing and lists sizes available.

WIRING. Low Voltage Air Circuit Breakers, GEA-5915. Low Drawout Switchgear, GEA-5916. General Electric Co., Schenectady 5, N. Y. 12 pp., 18 pp. 8½" x 11" ea.

Detailed in these two booklets are new air circuit breakers and a line of low voltage switchgear. Cutaway views, photos of actual installations, and diagrams are accompanied by concise, readable explanatory texts.

continued on p. 234

Cincinnati– CITY WITH THOROSEALED HOMES



"Beautiful Homes for Your Very Own"

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CINCINNATI 24, OHIO
October 25th, 1951

Standard Dry Wall Products
New Eagle
Pennsylvania

Gentlemen:

During the past five years we have built four hundred homes in the greater Cincinnati area. I have to admit, and most builders will, that water is one of our greatest problems. We have had our share of dampness and troublesome leaks as most builders do, until we were at our wits end as to know what to do.

The past winter and spring was about the dampest ever recorded in the state of Ohio. Having tried just about every waterproofing on the market without the best results, we decided to try Thoroseal.

We have built sixty-five homes so far this year. Each of these homes were given a two brush application of Thoroseal. To date we have had but one complaint, which was minor and easily stopped with Water Plug. I am thoroughly convinced and sold on Thoroseal and Water Plug. I believe it is the best waterproofing on the market today. It is superior to anything we have ever used.

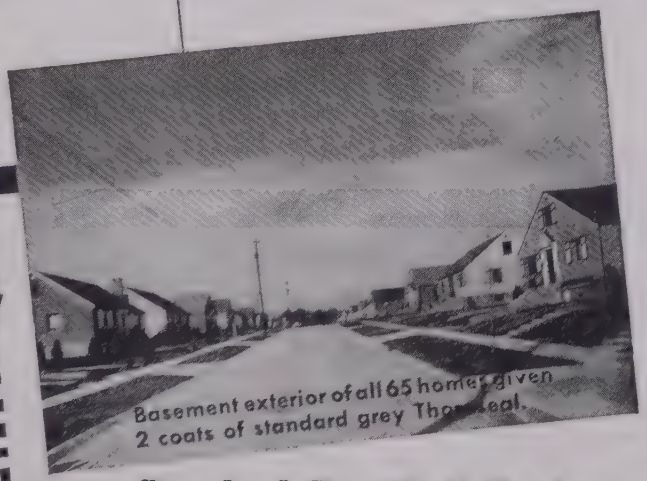
Yours very truly,

Grover L. Stuckey Supt

Noted home builder claims Thoroseal and Waterplug best material on the market--

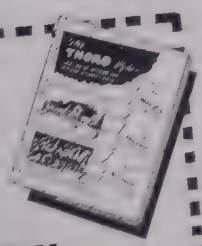
Here's a contractor who won't be annoyed with customer complaints again. To be sure that all his homes are dry, he uses the 40-year-old Thoro System Products, a name top on the list with famous contractors the world over.

Thoroseal comes in beautiful pastel colors and can be applied also to the interior surfaces of your basement walls to seal and beautify.



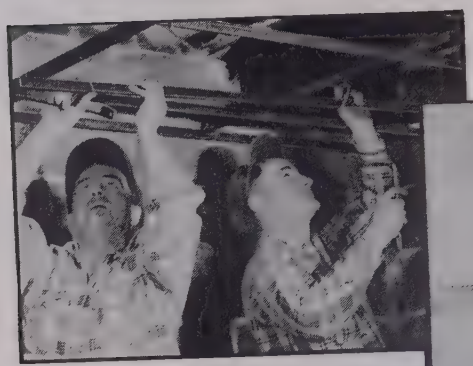
Basement exterior of all 65 homes given 2 coats of standard grey Thoroseal.

Get our 20-page brochure, pictorially described in detail "HOW TO DO IT"



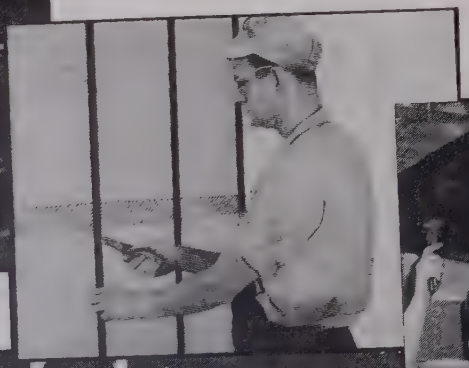
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CAPITOL ANNEX . . .

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Kentucky's new Capitol Annex Office Building in Frankfort successfully combines classic beauty with modern functionalism, yet retains the prime advantages of each. Patterned in style after its "sister" building, the State Capitol, the new Capitol Annex provides needed office quarters for the various State Government agencies.

To give a firm foundation to all plastered surfaces, and still allow for maximum flexibility of design, the builders used over 100 miles of Wheeling Channels and 50,000 square yards of Wheeling Metal Lath. They were thus assured of sleek, graceful interiors, free from cracks and flaws.

The Wheeling line of building materials includes: Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Metal Lath Accessories, Tri-Rib Steel Roof Deck, ExM Angle Frame Partitions, Steelcrete Vault Reinforcing.

WHEELING CORRUGATING COMPANY, WHEELING, WEST VIRGINIA

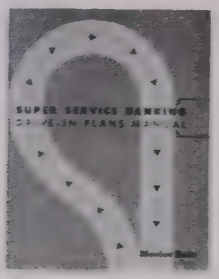
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DRIVE-IN BANKING. Super Service Banking Drive-In Plans Manual. Mosler Safe Co., 320 Fifth Ave., New York 1, N. Y. 12 pp. 8½" x 11"

Fast, convenient banking service for motorists is the theme of this recent booklet. Prepared to help bank designers plan drive-in facilities, the manual covers a variety of efficient installations. Schematic drawings indicate dimensions of window units, proper radius of automobile turn, correct spacing of the multiple drive-in windows, and traffic flow markings.

PLANT LAYOUT. Chart-Pak for Making Industrial Layouts. Chart-Pak Inc., 104-8 Lincoln Ave., Stamford, Conn. 10 pp. 8½" x 11"

Prepared to introduce architects and engineers to a simple means of preparing industrial layouts, the brochure describes a line of pressure-sensitive transparent and opaque tape rolls. Some of the tapes are preprinted with symbols (drawn to ¼"=1' scale) representing materiel conveyors and structural components; others with broken and solid lines, reference numbers, letters and arrows. Plastic layout boards and grid sheets for equipment templates are also described in the publication.

MAINTENANCE. Wall Washing Machine. Ross & Story Products Corp., 705-707 Dewitt St., Box 12, Syracuse, N. Y. 4 pp. 8½" x 11"

Describes the efficient operation of a portable non-electric machine for cleaning walls and ceilings.

BUSINESS MACHINES. 10 Keys, Booklet No. RE 8500. Remington Rand, Inc., 315 Fourth Ave., New York 10, N. Y. 4 pp. 8½" x 11"

The folder describes a fast way to do columnar tabulations for billing and statistical work with Remington's electric 10-key tabulator typewriter. According to the publication, a typist can tabulate accurately from one column to another without removing her hands from the keyboard.

SIGNS. Plexiglas, the Outdoor Plastic for Signs. Rohm & Haas Co., Washington Square, Philadelphia 5, Pa. 24 pp. 8½" x 11"

Solid-color and color-decorated signs, fabricated of *Plexiglas*, a weather-resistant acrylic plastic.

WATER STORAGE. Elevated Steel Tanks, Bulletin 101. Pittsburgh-Des Moines Steel Co., Neville Island, Pittburgh 25, Pa. 20 pp. 8½" x 11"

Five models of elevated steel tanks for water storage are pictured in this brochure. The tanks are recommended by the manufacturer



for public and private water systems, industrial and institutional applications, as well as airports and military bases.

continued on p. 238



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CONCENTRIC
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LOW COST – Due to large-volume production, these units are available at most modest cost.

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Illustrated: LITECRAFT #106 for 300/500W. One of a complete line of pendant and close-up Concentric Ring Fixtures from 150W to 1000W. AFL-IBEW

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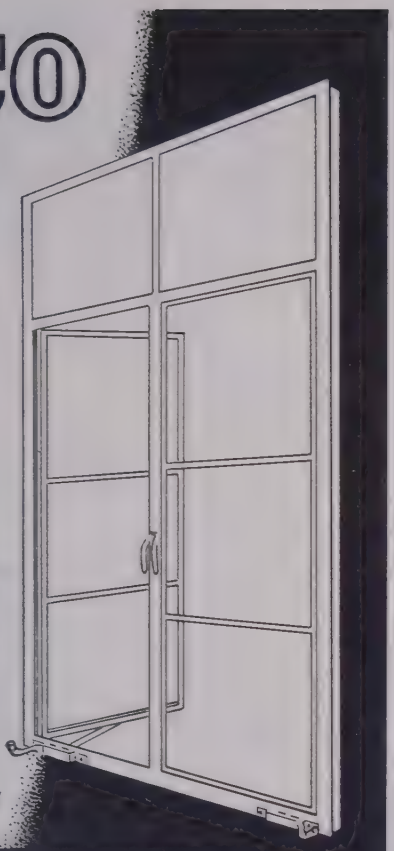
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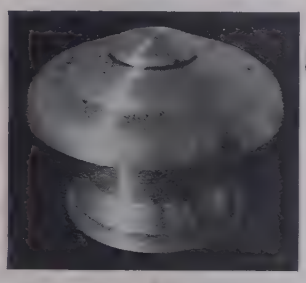
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will appear in coming issues.

Of the 24 other buildings,
16 were published first or exclusively
in ARCHITECTURAL FORUM.

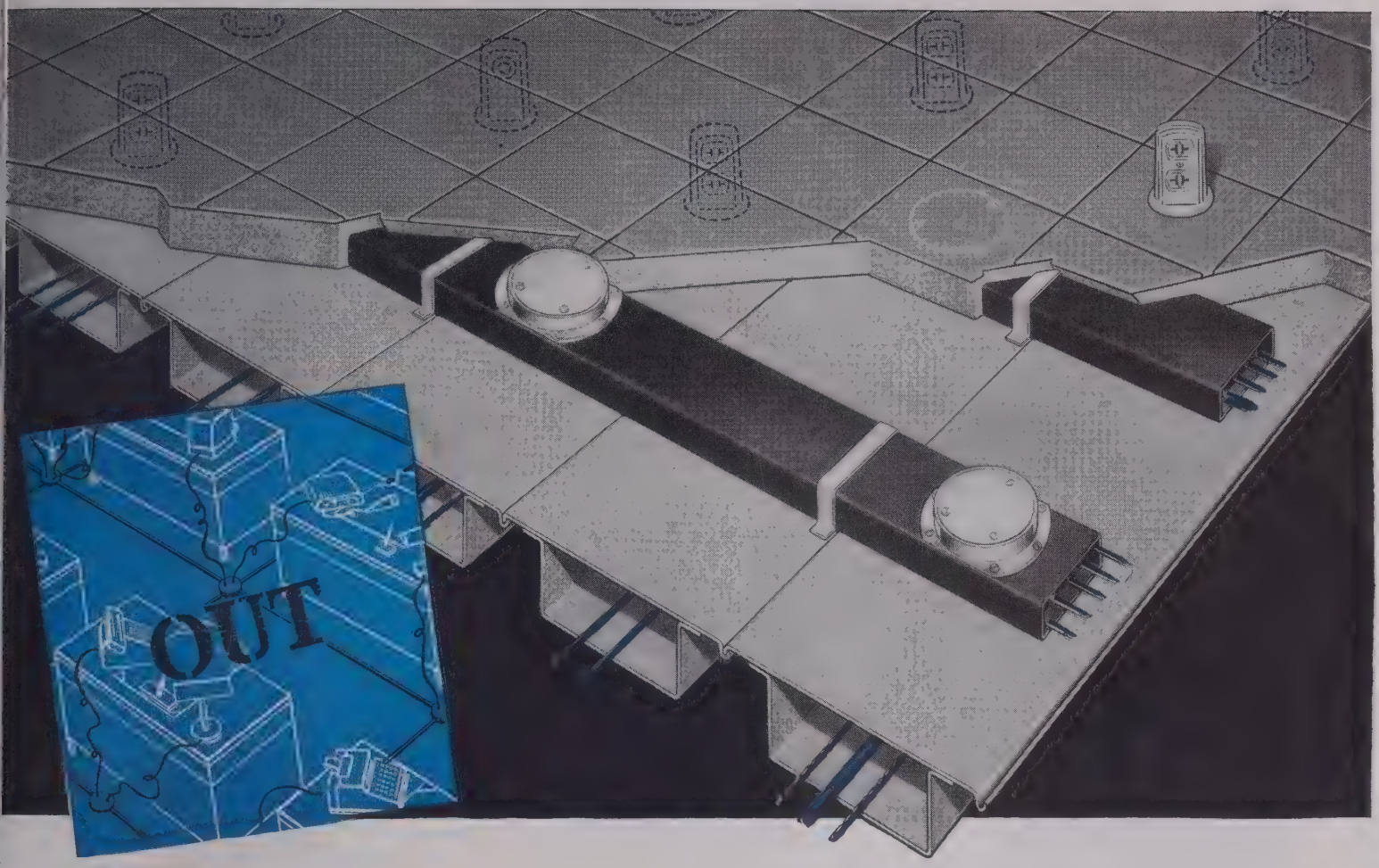
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You save building time, labor, materials and money —and get *flexible permanence*—with Fenestra-Nepco Electrifloor. And your building will never be electrically obsolete.

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It's structural unit, electrical system and subfloor all in one. Long-span, load-rated, lightweight Fenestra cellular steel panels are quickly locked together by a small crew to form a tremendously strong subfloor. Electrical header duct is then mounted on top of the panels and wires fed through the panel cells, which form smooth, clean, closed raceways. These raceways are 3″ x 10″—big enough to handle power, light and telephone cables, or extra wires if they are ever needed.

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GLASS. Mississippi Glass, Catalogue No. 53, Mississippi Glass Co., 88 Angelica St., St. Louis 7, Mo. 16 pp. 8½″ x 11″

Prepared to help architects, contractors and decorators select the right kind of patterned glass for particular applications, the catalogue gives valuable technical data on *Coolite*, Mississippi's heat-absorbing and glare-reducing glass, and describes the essential features of its other rolled, figured and wired glass products. Close-up photos illustrate the various patterns and tables give information on sizes and thicknesses available, and light transmission characteristics.

WOOD PANELING. WedgeWood Wall Covering. Georgia-Pacific Plywood Co., 270 Park Ave., New York, N. Y. 16 pp. 9″ x 12″

Five photographs of attractive interiors show finished applications of *WedgeWood*, a grain-textured plywood. The paneling is described as being easy to apply and finish. It is also reported to be inexpensive. The reader is invited, via a comparative cost-sheet page, to compute installed costs of various decorative wall-paneling materials.

MOTORS. Gleason-Avery Instrument and Timing Motors. Gleason-Avery Inc., 45 Aurelius Ave., Auburn, N. Y. 12 pp. 8½″ x 11″

Catalogue presents specifications and photos of the manufacturer's timing and gear motors, and temperature controls, complete with rating charts and mounting dimensions.

LIGHTING. Troffers, Folio No. T-50. Gruber Lighting, 125 S. First Street, Brooklyn 11, N. Y. 12 pp. 8½″ x 11″

Troffer-type fluorescent fixtures designed for recessed mounting in acoustical ceilings are illustrated and described in this two-color folio. The unit does not have to be fastened to the ceiling; snap-in housing straps support it by spring tension. Ten different shielding devices are adaptable to the basic fixture, including hinged louvers, diffusing glass and control lenses.

LIGHTING. Incandescent by Gruber, Folio No. 1-53. Gruber Lighting, 125 S. First St., Brooklyn 11, N. Y. 16 pp. 8½″ x 11″

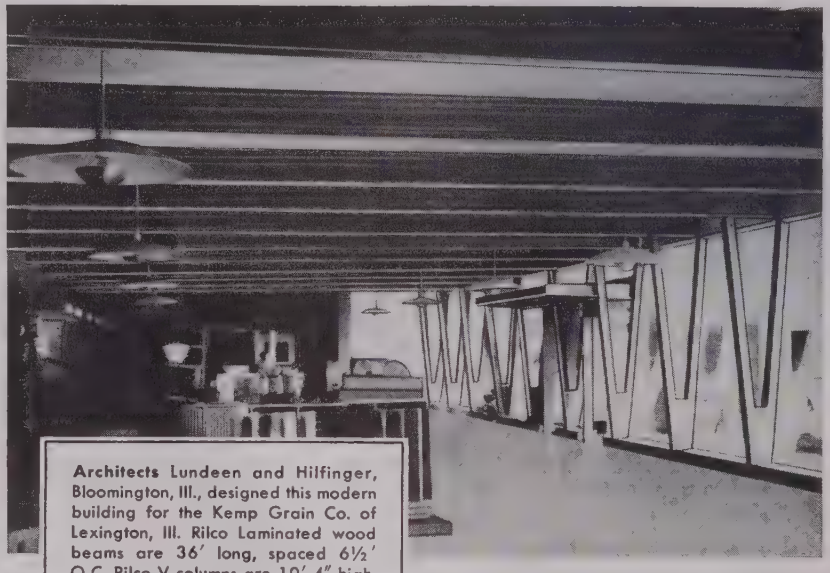
Thirty different incandescent ceiling and wall-mounted lighting fixtures are illustrated in this two-color booklet. Designed for commercial and institutional interiors, the fixtures include corridor units, ceiling bowl units, cornice fixtures, hospital bed lights, and several pendant fixtures.

LIGHTING. Ballasts for Fluorescent Lamps, GEA-4950E. General Electric Co., Schenectady 5, N. Y. 16 pp. 8½″ x 11″

The two-color bulletin contains photographs and wiring diagrams of fluorescent lamp ballasts for residential, commercial and industrial use. It gives specifications of switch start, trigger start, slimline, circline, germicidal, and d.c. operation ballasts.

COPYING PROCESS. Hundreds of Uses for Ozalid. Ozalid, Div. of General Aniline & Film Corp., Johnson City, N. Y. 48 pp. 5″ x 8½″

A process for duplicating working drawings and records from originals prepared on translucent paper is described in this booklet. Specific advantages for small as well as large firms are cited for the *Ozalid* copying process.



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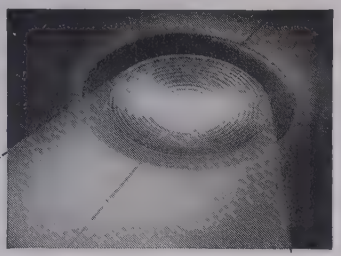
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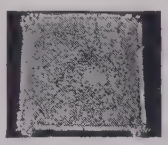
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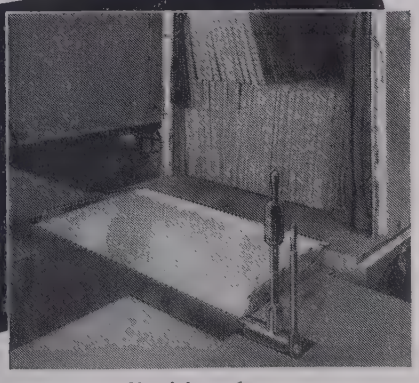
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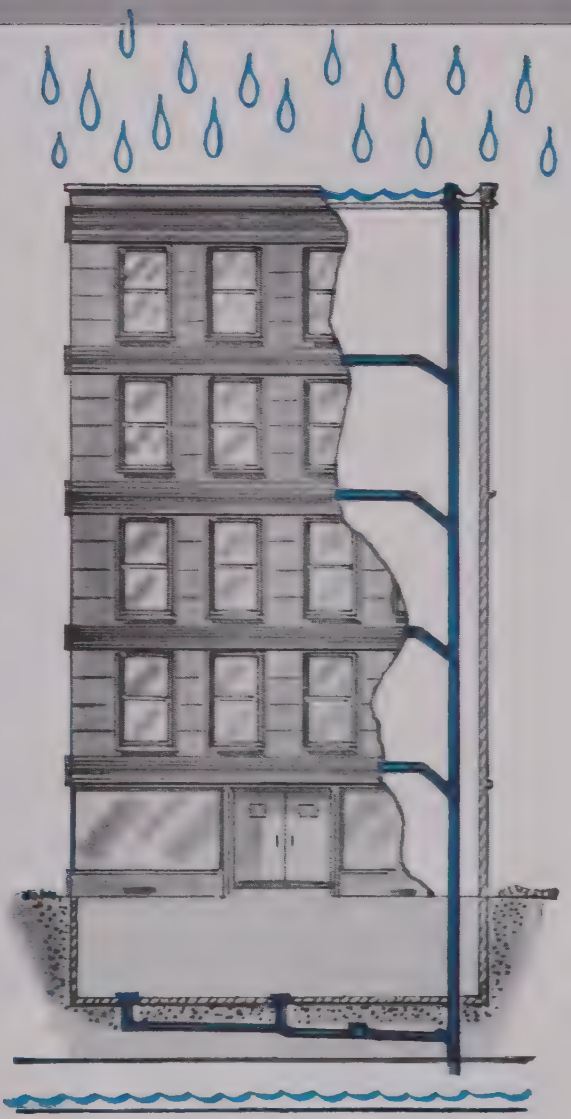
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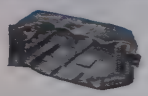
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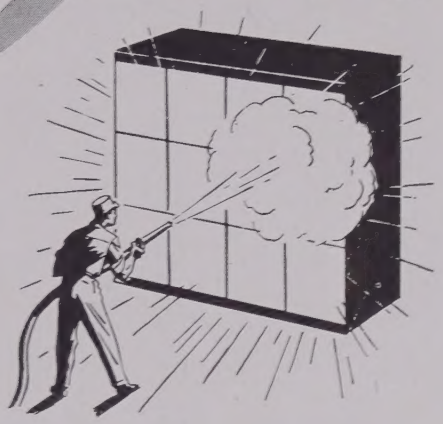
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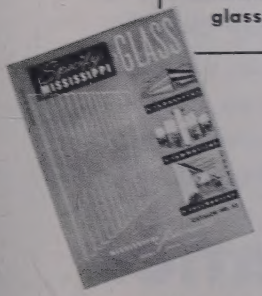
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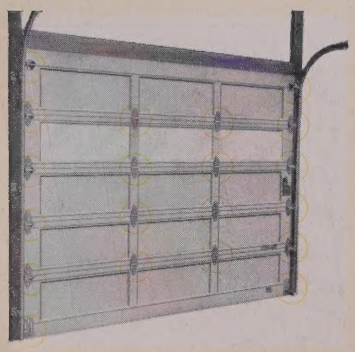


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